THE

MEDICAL REPOSITORY.

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ORIGINAL ESSAYS.

PAPERS ON THE LAST WINTER EPIDEMIC IN DIFFERENT PARTS OF THE UNITED STATES; 1812–13.

(Continued from pages 246—267.)

WE are obliged to present and condense in this Volume, the first of our New Series, all the communications and documents received on this interesting subject, which thus embodied will better assist the inquiring attention of our readers. Should we experience, during next season, that kind, or any other prevalence of disease, throughout the U. S. we shall have completed one account before we undertake another. In order therefore to proportion the present subject to the limits of this publication, it has been necessary to abridge a few papers in our file, and to insert extracts from the others, as we have done in the preceding Number. We hope that the respective authors will

be satisfied that we have paid a scrupulous attention to the most prominent parts of their writings and to the genuine representation of their opinions. The Editors have only glanced at a few papers on this subject, which were transmitted at late hours, and at others of a polemic description, with which they had no right to interfere, wishing only to take notice of the facts and doctrines they contained.

PAPER NO. IV.

An Account of the Epidemic pervading the Country, and affecting the Inhabitants and Soldiers, in a letter from Silas Fuller, Surg. 23d Reg. U. S. Infantry, to the Editors.

EXTRACT—Buffaloe, Dec. 26, 1812.

This sickness is not, as has been represented, confined wholly to the army. The soldiers have only shared in a wide-spreading, and alarming epidemic, pervading a vast extent of country; the mortality of which, is without an example in this part of the state. The disease appears evidently to depend, on some peculiar state of the atmosphere, as a remote cause; and on exposure to wet, cold and fatigue, or some imprudent irregularity, as an exciting cause. In proportion as these exposures have taken place, a more or less violent form of the disease is produced.

The most common form which has presented itself, is that of *Sthenic Pneumonia:* The most fatal, and unmanageable, of the *Pneumonia Notha* of our old books. Under this last form, it has but seldom appeared; and notwithstanding it is evidently produced by the same remote and exciting causes as the first, there is a strongly marked difference in the phenomena of them.

Those advanced in years, and, in a particular manner, those who have weakened, or broken down their constitutions by an intemperate use of spirits, are subjects of the asthenic form of this epidemic.

The asthenic form most commonly commences with cold shivering. After some time, there is a sense of heat. In some instances, the common symptoms of PYREXIA are noticed. The pulse, however, for the

most part is small, and heat not higher in degree than natural. During the whole course of the disease, respiration is extremely laborious, with slight erratic pains through the chest.

A sense of weight and fulness is felt through the whole extent of the thorax, which are increased to an insuperable degree, while the patient is in an horizontal position. There is a peculiar paleness, and wildness of aspect, not easily described. In some cases, a diarrhœa adds to the list of morbid phenomena. Some have expired, while sitting, or walking, apparently from suffocation.

In the above described cases, the lancet has been employed with caution. Bleeding, however, has in some instances, been attended with very great advantage. The pulse has become fuller, after the first bleeding, while its repetition, with other remedies, has completed the cure.

An alterative scheme, by the use of calomel, nauseating doses of emetic tartar, epispastics, fomentations of the extremities, and to the lungs, in the form of vapours, has been generally pursued, and in some instances with success. It is, however, to be regretted, that notwithstanding every exertion, a very considerable number of these cases have put on formidable symptoms in a few hours, such as rattling in the throat, a greatly altered countenance, and, finally, have terminated in death in the course of one day.

Upon laying open the chest of some who died under this form of the disease, congestions, inflammation, effusion and adhesion have presented themselves.

The above cases, when compared with the sthenic form of the disease, so far as my observation extends, have appeared, only, in the proportion of one to fifty.

This epidemic, in its sthenic form, is not always a Pneumonia. The fever has, sometimes, appeared without any local affection, under the type of Synocha. In a few instances, the inflammation has attacked the brain, and its meninges, producing a Phrenitis. Inflammations, followed with a suppuration in the ears, throat, and frontal sinuses, are varieties of this disease. Distinctions, however, like these, are of very little practical

utility, as local inflammations are invariably removed by the same course of remedies. The only practical distinctions found necessary, are those of its several stages, which present themselves, in the order of a cold, hot, and low or sinking stage.

The sthenic form of this disease; is ushered in by a cold, or shivering fit, rather remarkable in force, and duration, which is followed by increased heat, frequency and strength of pulse,—pain in the side—difficult respiration—cough—and expectoration, for the most part, streaked with blood. In proportion as the cold stage is more or less, a more or less violent form of disease may be expected.

The first intention is to remove the cold stage; this is effected by bathing the feet in warm water, by placing the patient in bed, and by the frequent use of vinegar whey for drink. This last is a safe, simple, but powerful sudorific, producing its effects, without danger from its stimulating quality.—These means, if properly applied, shorten the duration of the cold stage, of course, lessen the hot and febrile stages which succeed, and mitigate inflammation and pain, wherever seated. Stimulants, especially astringents, as the patient's life is endangered thereby, should here be avoided. These last, when employed in any considerable degree, increase the inflammation, and render the effects of suitable remedies uncertain. As soon as the cold stage is removed, and re-action, upon the surface, takes place, accompanied with heat higher in degree than natural—flushed countenance—hardness, fulness and frequency of pulse—cough—difficulty of respiration—pain in the head, or side, and even when the disease shews itself, only, by an increase of arterial action, immediate recourse must be had to the lancet. The bleeding must be repeated *pro re natâ*.—After venesection, should there be much heat, sulphate of soda [glauber's salt] may be administered for a cathartic, after which, calomel may be employed either as a purgative or as an alterative, as the case indicates, with antimonials in nauseating doses; full vomits should not be given until proper evacuations have been made. Puking, previous to any evacuations, while the vessels are distended, and highly excited, may be pro-

ductive of fatal consequences, by rupturing the blood-vessels of the brain, or lungs.

Nitre, cream of tartar beverage, demulcent drinks, and diluents should not be overlooked in this stage of the disease.

Where expectoration is difficult, and the lungs loaded with viscid phlegm, the steam of equal parts of vinegar and water may be inhaled with advantage.

As soon as the violence of inflammation is, in some measure abated, epispastics should be applied to the pained part. These it may be necessary to repeat, as the nature of the case may require. If we can place any reliance upon our own knowledge, or have the least confidence in medical science, it must be conceded that this form of the epidemic, is of an highly inflammatory character, requiring depletion, and the antiphlogistic treatment for its cure. In this stage we have not been governed in the employment of the lancet, wholly by the state of the pulse, which, in many instances, is rendered small by obstructions of the capillary circulation, by inflammation of the brain and its meninges, by congestions, and general torpor. In those cases venesection is absolutely necessary. After blood-letting the pulse, commonly is found to rise, and dilate, in proportion to the relief procured. When a resolution of the inflammation is not obtained, by the employment of the above means, the disease terminates fatally, in eight or nine days, (much sooner when stimulants have been used.)

The sinking stage of the disease is known, by the smallness of the pulse, coldness of the extremities, dark, shining appearance of the tongue, extreme debility, with some degree of delirium and subsultus tendinum. Here, the patient should be supported with wine whey, wine and water, &c. carefully avoiding the extremes of too high, or too low excitement. An over proportion of excitement will increase the local affection, which is supposed to still exist in a degree, while the want of it will leave the patient to languish, and sink under a general debility. Calomel in small doses, so as to produce some degree of ptyalism, gentle emetics of ipecacuanha, epispastics, laudanum, and eccoprotics, properly timed, prove

serviceable in this stage, and are, in a great proportion of cases, attended with success. In the cure of this disease much depends on judiciously timing the remedies, especially of their seasonable application.

The fatal effects of *very profuse bleeding*, in the first described form of this disease, led to a practice in this vicinity, extraordinary in its nature and consequences. It appears the more proper to take notice of this practice, as it has been falsely, or mistakenly reported, to have originated with the surgeons of the army.

This disease has prevailed in camp, among the soldiers, and in our towns and villages, among the citizens, under similar symptoms; and it is a well known act, that more of the latter, in proportion to the number sick, in this vicinity, have fallen victims to this disease, than of the former.

PAPER NO. V.

Case of Malignant Pneumonia successfully treated, and communicated to the Editors, by Drs. E. S. and C. C. Blachley.

This is a very interesting and remarkable narrative, as it puts it beyond a doubt, that the prevailing epidemic has in some instances exhibited singular characters, and required very different remedies.

It is stated that sometime in February 1813, Gilbert Horton, a recruit in the U. S. army, had been exposed to cold and moisture, in consequence of which he was soon taken with a chill and severe symptoms of Pneumonia. His friends did not omit to try to relieve him by hot decoctions of ginger and by wine, as they thought should be done in the case of *a spotted fever!*

His seizure rapidly became that of an universal agony. He was raving and tossing; his cheeks were purpled with blood, his respiration short, difficult with a catching for breath, as occasioned by pain and congestion in the thorax, cough dry, skin hot, mind greatly excited, discoursing incessantly and wildly delirious; pulse accelerated and depressed.

In this situation our Correspondents had no hesitation to extract blood, and administer every two hours an

emetic mixture, restricted by a proportion of nitrate of potash, and they substituted mucilaginous and acid drinks to those stimulant potions which had previously been used. On the following day they found that the blood drawn before, had a tough coat of coagulated lymph, and as the symptoms continued the same, they had again recourse to bleeding and to the antimoniated mixture.

The third day offered symptoms somewhat abated, in the restlessness and in the pulse, now become fuller. Fourteen ounces of blood were again let out, and a blister was applied on the breast, while the former prescriptions were continued.

The patient is now represented to be in that stationary condition, in which the worst symptoms occasionally returning, portend an imminent danger, and on the other hand, a short remission of them justifies the hope of a favourable change. Horton was beginning to expectorate a little mucus. From the fourth day of this malignant attack to the 9th, he gradually progressed to a critical resolution, through violent and untoward symptoms of effusion in the thorax, of great difficulty for respiration, and of an alarming prostration of strength. It must be remarked that his body was frequently washed with warm vinegar, and that the following recipes were successfully and very judiciously prescribed.

R. Calom. ppt. gr. ij.
Pulv. antim. gr. iij.
Nitr. potass. gr. vi.
Pulv. gum. opii. gr. 1-4.
M. *Pulv. Sum. quaq. 3â hora.*

R. Pulv. gum. opii. gr. 1-5
—— Camph. gr. ij.
—— Antim. gr. iij.
—— Nitr. potass. gr. v.
F. Pulv. Sum.
[quaq. 2â hora.

From the 5th to the 9th day the resolution or crisis was effected partly by ptyalism, and by boils with broad and livid apices, hard and deep-seated bases, on different parts of the body; and during this period, the patient was served with nutritive diet and strengthening medicines. Our Correspondents observe, that, "A brown, thin skin quickly separated from the upper surfaces of the furunculi mentioned above, leaving them with broad spongy appearances, or with numerous holes filled with pus. That these were at first dressed with

a caustic powder and covered with adhesive plaisters, and ung. basil. They soon were reduced to the state of simple ulcers, when Horton rapidly recovered and joined the recruiting party." They further observe, that,

"Had this soldier been treated with stimuli as in Pneumonia typhoides (Typhus petechialis malignus novus of Dr. North) which has been so destructive in many places this winter, he would probably have quickly sunk into the jaws of death, through indirect debility. *Symptoms*, and not the name of a complaint are deserving the principal attention of medical practitioners. Venesection raised the fulness of this man's pulse and converted pneumonia into pleurisy, with pain seated in one side. This malignant malady would probably have exhibited more marks of typhoid debility and malignity producing carbuncles, if the crisis of the complaint which occurred on the seventh day of the disease had not been watched, and the system immediately nourished and supported by nutrients, cinchona and wine."

PAPER NO. VI.

Observations on the Synochus, or mixed fever, epidemic in the State of New-York. By Dr. Ricketson. Troy, 25th Feb. 1813.

EXTRACT.

"Various and opposite opinions being entertained respecting the name, nature, and treatment of the epidemic disease now prevailing in various parts of this state; I shall make a few observations on it, as it appeared in Troy, hoping, in some degree, to reconcile those different ideas and modes of practice regarding it.

"Some call it a putrid or malignant pleurisy, some a bastard peripneumony, and others a typhus fever; but most of the cases which I have seen here this winter, having been ushered in, and accompanied through much of their course, with inflammatory symptoms, I think the term typhus is not so appropriate to it as that of synochus, which is thus defined: 'A fever composed

of synocha and typhus in the beginning, synocha in the progress, and towards the end, typhus.' *Cullen.* If we resort to the nosological arrangement for a specific name, it will probably be found to answer to the synochus pleuritica, Sp. 5; or the —— hyemalis, Sp. 8, of Sauvages.

"It makes its attack, and in some cases very suddenly, with chills, succeeded by heat and pains in various parts of the body, particularly in some part of the thorax, back and frequently in the head, neck, and limbs, with anxiety, difficult respiration, oppression at the chest, cough, &c. the last of which is sometimes accompanied with a bloody expectoration. The pulse is quick, though not often full or hard. The blood appears sizy, and with a large proportion of crassamentum. In one patient I found the blood with more inflammatory crust in the advanced, than in the early stage of the disease. The tongue is at first moist and furred and of a light colour; it being only in the advanced stage of some cases that it becomes dry, and dark. The skin is hot and dry, and a sweat is with difficulty brought out by the usual remedies.

"This disease being frequently diversified in the accession and progress of its symptoms, makes it necessary that the description and mode of treatment here given, should be understood in a general way, and much depends on the prudent judgment of the physician, in properly selecting and adapting the various remedies in the different cases and stages of it."

Of the method of treatment variously described by the Doctor, as circumstances seem to require, we observe firstly, that he has judged it advisable to let blood in the arm or neck, a repetition of which he has known to become necessary, and has done it with success. He has also relieved patients by local bleeding, with leeches or by cupping.

2dly. That he has rarely excited full vomiting, preferring antimonials in small doses in order to promote sweating, a free expectoration and an open state of the bowels; he also greatly depends on sweating as a primary and important remedy. To promote this last indication he approves a popular practice of rubbing the

patient with salt water, and enveloping him afterwards in a blanket wrung out of hot vinegar, and applying to him hot bricks wet with the same.

3dly. Dr. R. has used mercury in this disease, but has rarely pushed it to the extent of ptyalism or full salivation. He concludes his paper with the following remarks:

"It is not improbable, that this disease has in some seasons and places, been attended with symptoms more inflammatory, constituting the genus of fever called synocha, or at least that of synochus, and in others, with those less so, and perhaps with the reverse, constituting typhus. This may, in some measure, account for the different modes of practice, some using the depleting plan in the former instance, and others the stimulant in the latter; it being not wholly new for diseases to assume different characters in different seasons, and even in different places in the same season.

"Notwithstanding the predominant character which the disease has assumed here, and the practice recommended, let the physicians remember, that in no disease, perhaps, more than this, ought he to be on his guard, watching the first symptoms or change towards a typhoid state, and regulating his practice accordingly. It ought to be recorded in the history of this disease, as well as in forming a correct idea respecting its nature and treatment, that most of the dissections which have been made in it, state, that the brain and the contents of the thorax with the adjacent parts, have been found in a high state of inflammation, and in much the same situation as in deaths from phrenitic and pneumonic affections."

PAPER NO. VII.

Second Edition of Dr. C. Yates' Essay.

The first publication on the winter epidemic, by this Physician, and some extracts of his essay we have already presented to our readers, in the preceding Number, page 247. We have since received a second edition of the same.

The first was inscribed to Dr. Stringer, of Albany. The present is inscribed to Dr. Coventry, of Utica; whom he eulogizes for having published a mode of practice in the disease, which both reason and experience have pronounced to be successful.

There are several pages of introductory remarks, not contained in the former publication. They are dated as late as May, 1813. It is stated that the distemper has not ceased with the winter. It is not confined to the cold season. It has appeared in new sections of the country, and was then raging in various towns in Connecticut, Massachusetts and Vermont. It has increased in some places where it was before lightly felt. During April, in Albany, it resisted medicine more obstinately than heretofore.

The author declares he has found no cause to alter the practice he had adopted. His confidence is not diminished, although he has not been able to cure every case, under the most adverse circumstances.

We observe a few alterations in the text; one of which is the retraction of the opinion, that the remote cause existed in the atmosphere, instead of which he offers that of Dr. Coventry, who "thinks the foundation was laid in the summer and autumn, and the latent enemy is now brought to light by different exciting causes. It is well known to physicians, that the poison which is the acknowledged cause of bilious fevers may often long be borne without producing its full effect."

We copy the following passage, as one of the most memorable that distinguishes the second edition:

"It is not without pleasure and pride that I am enabled to add the names of Doctors William Bay and Peter Wendell, two of our most respectable physicians, in support of the practical observations contained in this essay. Our communications have been reciprocal on the subject of this disease from its commencement.

"Its nature and proximate cause we have never differed on, nor its method of cure. I am indebted to them on this as well as on many other occasions, for much valuable practical information; which from their accurate observations and deservedly extensive practice,

they have been enabled to acquire, and which they have communicated with a candour and liberality worthy of the profession.

" I believe the time is not far distant, when experience, if not *theory*, will reduce (with few exceptions) the whole materia medica, to the two simple articles, EMETICS and CATHARTICS.

" These, either separate or combined, will become the only dependants for the most inveterate or malignant diseases. They will be exclusively and successfully employed in *fevers of every grade, under every condition of the system;* and there is as much probability of a unity of remedy, as ' unity of disease.'

" I have for the last three years, depended principally on purgative medicines for the cure of fevers.—I have cured several cases of protracted Typhus fever, bearing all the unfavourable appearances it is susceptible of in our climate, with *cathartics only*. Strange as it may appear, I have ventured on this exhibition under every *appearance* of dissolution, with perfect success, when on former occasions, and under similar circumstances, my whole dependence had been on the most powerful stimulants, such as bark, wine, opium, musk, camphor, &c. In this I followed the theory and practice of the day; the practice of the greatest and best men of our profession.

" It was in my hands as it had been in theirs—if the system could *bear the shock*, the patient *recovered*—if not, he——yes, he died!"

Further discussion of the question, concerning the Winter Epidemic of 1812–13.

Besides the papers and pamphlets already submitted to our readers, we have perused various tracts, on the subject of the predominating distemper, in the Newspapers. Some of these, from their sense and respectability, are worthy to be remembered. One of these pieces, laid before the public in the Gazettes, is dated at New-York, in February last, and addressed to a young physician. It contains the writer's opinion of the

disease, and his advice to his juvenile friend, on the practice that ought to be pursued in Albany. It is stated that the disorder is not new, but well known to the medical world under the names of *Pneumonia typhoides*, *malignant pleurisy*, and *pleurisy in the head.*

To this an answer was written in Albany, dated February 22d, questioning the correctness of the principles which it contained; saying, that active and passive inflammation could not exist in the constitution at the same time, and denying that the distemper under consideration is the spotted fever which has existed for several years in the Northern and Eastern states.

A further inquiry was made at Utica. An able writer in the Journal called the Patriot, contends that the disease is a bilious fever: that it is endemic in the greatest part of our country; that its symptoms are diversified by the season of the year, and other peculiar circumstances; that it is caused by a poison engendered by vegetable putrefaction; and that this can be best expelled by cathartics, which he extols in the highest strains.

Afterwards, and as late as the early part of April, another letter, by the same person, appeared in the same Gazette, containing strictures on the writings of several physicians, who had preceded him. He denies roundly that the prevailing disease is of the pleuritic character; or that *real pleurisy* runs into typhus: But, that *bilious* fevers readily degenerate into a typhoid form. He considers vitiated bile as the true cause of the malady; and that blistering, enema, warm baths, fomentations to the extremities, snake-root, eupatorium, and such lady-like prescriptions would be equally efficacious in removing animals from the intestines, as in expelling the actual agent of mischief. The peccant matter, he declares, ought to be expelled by emetics and cathartics combined, or by the latter alone. By perseverance in their use, the symptoms, he says, will yield. Pleurisy and typhus will never appear; nor the mongrel distemper alleged to have been produced by their union.

PAPER NO. VIII.

By H. Huntt, Esq. Navy Surgeon, &c. On the Epimic, as it appeared among the Seamen and Marines, at the City of Washington.—Communicated to the Editors.

Washington, April 11, 1813.

I send you an account of a disease which prevails among the crew of the frigate Adams, at this place. The men belonging to her have been living for some time on board the New-York, an old rotten frigate, which has been a long time in a filthy state.

This disease frequently comes on in the form of a common cold, attended with cough, sore-throat, redness of the eyes, and a pain in the right pap. In about forty-eight hours a fever takes place, with increased pain of the breast, and frequently delirium. The pain is so severe, for several days, as to keep the patient in a constant state of agony. Sometimes he is seized suddenly, without the above premonitory symptoms, with violent pains in the right pap, fever, delirium, and great prostration of strength. The pulse in the commencement of this disease is always typhoid, and in two or three days becomes typhus.

In the commencement of the disease, I have given, with most success, active doses of calom. and tart. emet. applied a large blister to the breast, and used the warm bath. About the third day, I begin with calomel and opium, alternated with wine, bark, and rad. serp. Virg. —at night an anodyne. If the patient survives the sixth or seventh day, he generally recovers.

Blood-letting has been used in two cases of this fever. I saw them both immediately afterwards, when a violent delirium succeeded, attended with a faultering pulse and cold extremities. Both cases proved fatal in a few hours. These patients complained of great pain in the right pap, cough, and difficult respiration, which led the Physician to believe that they were attacked with pleurisy.

Washington, June 15.

Since I last wrote to you I have had more than one hundred cases of the epidemic which was the subject of my letter. This disease was certainly a pneumonia, attended in the commencement with typhoid symptoms, which quickly changed to a typhoid state.

When the disease came on with cough, sore throat, pain in the breast, and a hot skin, an emetic was always administered with good effect: afterwards the spt. nitri dulc. and laud. were given every two hours, and a blister applied to the breast. In a day or two the bark, with rad. serp. and wine, were freely administered until the patient recovered. When time would allow, I have given pills of calom. and opium with much success.

When the disease came on suddenly, attended with great prostration of strength, difficulty of breathing, cold skin, and feeble pulse, I found it very hazardous to give any evacuant, but was obliged to resort to stimulants at once. In these cases. wine, brandy, and aromatics were given freely; a large blister applied to the breast, and hot applications to the extremities.

Very few cases of this fever would bear the operation of purgatives; and in several instances I have seen much injury done by them. However, when the patient complains of pain or uneasiness in the bowels, a gentle purge may always be given with advantage. Out of one hundred and forty cases which occurred among the crew of the Adams, the above mode of treatment cured one hundred and thirty-four.

About the middle of May, this disease made its appearance among the crew formerly belonging to the brig Viper. These men were allowed the privilege of frequently going out of the yard, and indulging in great intemperance; in consequence of which the disease prevailed with great violence among them; and in many cases proved fatal in a few hours, attended frequently with an obstinate puking and diarrhœa, accompanied with a cold and clammy sweat. Out of twenty-two cases belonging to this crew, seven died, four of whom I opened, and found the thoracic and abdominal viscera, free from any appearance of disease, except one, the

left portion of whose lungs was much diseased; but I was afterwards informed by the commanding officer, that this man had laboured under a pulmonary affection for a long time. This disease has proved in many instances *here* to be contagious.

[Here the Editors conclude all the documents and best materials for information they have diligently collected and selected on the last winter epidemic, and for which they respectfully return their thanks to their Correspondents. They will avail themselves of the first opportunity to resume the subject, with the conclusive inferences and doctrines on the causes, varieties and best modes of treatment as warranted by the various testimony actually laid before the public.]

An Historical Essay on Epileptic Convulsions, exemplified by a Case, successfully treated by Dr. Vine Utley, of New-London, Connecticut.

ON the seventh of August, 1810, I was called ten miles to visit Miss M—— G——, of Lyme, who was about sixteen years of age. Her mother informed me that her catamenia appeared once or twice, when she was fourteen years old, and had not since. Her parents imagined that her obstructed menses were caused by being suddenly exposed to cold water or cold air immediately after unusual bodily exercise. The idea of the cause of her disease I think was erroneous, and the effect was mistaken for the cause. The liver was primarily affected, as the following history of her disorder and method of treatment will fully demonstrate.

A few months after her catamenia ceased, slight convulsive fits began to appear, and in the course of a year they had increased to an alarming degree, and (with propriety) may be termed Epilepsia of the most violent kind that ever afflicted the female race. The paroxysms occurred frequently in the course of the day,

and then would cease for the space of a week or ten days, unless suddenly agitated at the appearance of some object, the coming to of the door, or the falling of something on the floor of the house, either of which taking place suddenly, was sure to produce an epileptic fit. Whether the object presented to her view or imagination was agreeable or disagreeable the effect was the same.

She had expressed an anxious desire to her connections for a long time that I should visit her, and prescribe for the cure of her disease, which was really distressing. Several respectable physicians had formerly visited and prescribed for her, with only temporary relief.

Upon hearing of my arrival, she was immediately seized with convulsions, and I was admitted into her room to behold the dreadful scene. I was shocked at the sight of the object! and my blood chilled in my veins in defiance of all the fortitude I was capable of rallying. The affrighted stranger at the first sight of such a distressed object unconsciously starts back, as if to avoid the scene. Figure to yourself a beautiful female, lying on her bed, threatened with instant suffocation, making a very unusual noise in respiration, and totally deprived of perception, exhibiting signs of the most excruciating pain, with the teeth firmly set together, and foaming at the mouth with bloody froth. Behold how she is agitated with the most dreadful convulsions! Her limbs are twisted and contorted, and threaten dislocation: her frame bends backwards by turns, so that her head and heels touch each other: her eye-balls continually in motion seem as if starting from their sockets. These fits now cease for a moment, but to return with increased violence, when she begins to beat herself, and with both hands to strike her abdomen so forcibly as to be heard by persons passing in the streets. To prevent injury a pillow is interposed. After thus beating herself a few times, see her seize one of her arms between her teeth, and bite with such violence as to leave the marks for several days. Trembling and apparently exhausted, listen to the mournful noise which she utters for some time, when her arm drops from her

mouth, and she lays more composed for a minute.—But by a sudden exertion of the muscles she raises herself up partly from the bed, and by one spring dashes herself against the walls of the house, or on the floor before the attendants have time to prevent it, if not constantly on their guard. While lying on her side, her head is bent back so as to make an arch of 80 or 90 degrees. Either sitting or standing, she assumes by turns almost every unusual and unnatural posture.

I was informed by her parents that at one time she stood more than an hour tiptoe on one foot, with her head reclining on the same side, and the hand of the opposite side elevated with her fingers pointed towards Heaven. It was thought by some that this young woman was immediately assisted by supernatural power. A story was circulated, and among the credulous it was believed, that her preternatural gestures amounted to witchcraft.

She would remain in the above described situation from ten to fifteen minutes, and then suddenly awake, as from a trance, and begin to converse with her attendants, at first with a low faint whisper, and a few minutes after speak aloud. It was really astonishing! that after passing through such a number of convulsive fits in the course of a day (which must apparently exhaust the firmest constitution) her bodily strength was but little exhausted, and her intellectual faculties impaired but for a few minutes after the convulsions left her. She was naturally witty, beautifully featured, and her countenance expressive of more than ordinary sensibility. Thus when you have fancied to yourself one passing through such dreadful convulsive motions, you have but a superficial idea of the disorder without being an actual observer.

The body of this poor unfortunate girl had been racked and tortured with convulsions to that degree, that it had brought on a paralysis of the urinary bladder, sphincter, &c. For more than a year she had been unable to void urine without the assistance of a catheter. She had become so expert in the use of the instrument, that she performed the operation on herself whenever necessary. The hemorrhoidal veins had burst, and her

catamenia discharged in small quantities by the rectum, at lunar periods, and once in a lunation. There was no obstruction in the passage to the uterus, as was demonstrated by examination, and introducing the probe through the os internum quite into it. The tendons posterior to the knee joint were so much contracted that she could not walk. The tendons and ligaments of one leg were contracted to such a degree, as with the femur to form a right angle, beyond which it could not be extended. Her muscles were soft and flabby, and somewhat emaciated. She was costive. Her appetite for aliment was generally poor, but sometimes she would feed voraciously on any thing set before her. Her pulse used to beat about 70 in a minute, and was soft, when free from fits. Her eyes appeared of a jaundice hue. Her body linen was tinged yellow after wearing it for a few days. She complained of a pain at the pit of her stomach, as she had formerly done. There was a yellow scurf on her tongue, as well as a yellowish tinge on the albuginea of the eyes; all which demonstrated to my satisfaction a disorder of the hepatic organs, perhaps a chronic inflammation of the liver.

MODUS MEDENDI.

I gave her twenty grains of calomel without the assistance of any other cathartic, but it did not operate at all as an aperient, nor produce ptyalism. After despairing of its active operation, I began to give sal. chalyb. and rad. colomb. combined; and also sal. sodæ dissolved in water. These medicines were continued daily till the thirteenth of August, without any abatement of her disorder. I had tried opium in large doses before I gave the calomel, but it only aggravated the convulsions. Having found by experience for many years that the mild muriate of mercury was a very efficacious medicine in disorders of the liver, I determined on its further and more extensive use. After taking eight ounces of blood from the arm, I gave thirty grains at one dose, and twelve hours after ten grains more, with the addition of fifteen grains of jalap. It was several hours after the last dose was given, before a cathartic effect was produced. It had however a powerful and salutary ef-

fect upon the system. The evacuation from the alimentary canal was copious and dark coloured. After its operation I applied an epispastic on the right side about the region of the liver where she complained of a soreness of long standing. I ordered the chalybeate and alkaline remedies to be repeated daily in large doses; and vegetable food till the yellow scurf disappeared from her tongue. The pain at the scrobiculus cordis, which she had complained of, began to abate, and soon after entirely left her. The stools became of a natural colour and were daily evacuated. From this time her epileptic fits also began to abate, both in frequency and violence. She exercised more or less every day by swinging in a chair suspended from the floor by ropes, but this was laid aside from the danger of injury by falling when suddenly seized with a fit. Not being able to move in an erect posture, from the contractions before mentioned, by extending her hands behind her for support, she was enabled to move about the house upon her hands and feet.

After continuing the chalybeate and columb. about three weeks, I found they had not so powerful an effect as an alterative in producing a change in her system as was to be desired. Her appetite for food was poor, but her convulsions had become quite mild in their recurrence, attended only with the loss of reason for a few minutes, and a tremulous motion of the system without falling down, after which she would awake (apparently) as well, as before the paroxysm commenced.

On the 17th of September she again became costive, stools dark coloured, and the pain at the scrobiculus cordis, or pit of the stomach, began to return, together with a yellow scurf on her tongue. I once more gave her thirty grains of calomel, and six hours after twenty of jalap. This had the desired effect and removed the pain. I repeated the blister on the right hypondriac region, and administered the chalybeate in still larger doses. Of the sal. chalyb. I gave her twenty grains at a time, once in three days, dissolved in an hundred times its weight of water. She took it on an empty stomach, fasting half an hour after taking it. Thus managed it seemed to keep the bowels open, it braced the fibres of the sto-

mach, and gave her a good appetite for animal food, of which I allowed her to take sparingly.

By the commencement of winter she had gained considerable flesh, and by being weighed she was found to have acquired twenty pounds since I prescribed for her. I gave her between five and six drachms of sal. chalyb. which dissolved in water as above mentioned was the only tonic that produced a salutary operation. Opium and distilled spirits did not agree with her in any form whatever. Her body linen and the eyes were no longer tinged with yellow.

By the middle of winter (to the inexpressible joy of her parents and other connections) her convulsive fits entirely ceased. From this time she suspended medicine, and by the vernal months she began to attend to business as a seamstress, and continued to labour at her needle with unusual assiduity through the summer. Her countenance appeared florid and healthy; but it is remarkable that she could not yet void urine without the assistance of the catheter. I have seen several cases of insanity which originated from a diseased state of the liver, completely cured by large doses of calomel, emetics, &c.

Late in the autumn of 1811, my female patient had a return of her convulsions, combined with fever; pulse 100 in a minute. I saw her pass through one violent paroxysm. With large doses of calomel and chalybeates, administered at regular intervals, the fits were removed in a short time. In the course of the ensuing winter she recovered the use of her limbs, by an emollient application composed of ol. terebinth. animal oil, and distilled spirits. By the use of this compound the contracted tendons and ligaments became so relaxed that she could straighten her lower limbs. The extensor and flexor muscles became so much invigorated that she could walk about the house almost as people of sound limbs.

At the opening of the spring her friends had the pleasing satisfaction of seeing her walk abroad, visiting her neighbours with a degree of sprightliness that astonished those who had formerly beheld her in that decrepid, forlorn and piteous situation!

I saw this young woman at her father's house on the 6th of April, 1812, about one year and seven months since I had first prescribed for her. I found her walking about the house erect, apparently in health, with pulse at 60 in a minute. It was the first time that ever I had seen her walk erect. At this time she informed me that she recovered from the paralysis of the urinary bladder, soon after taking the last portion of calomel, which was about forty grains at one dose. One hundred grains of calomel had been given as an alterative, by her former attending physician, all in a short space of time without any apparent operation as to purging or ptyalism. My patient informed me with a pleasant smile that she had no longer use for the catheter. Her menses have not returned the natural way, but appear monthly by the rectum, and it is probable they will continue thus to flow as long as she continues to exist.

REMARKS.

" Epilepsia is induced originally like other convulsions, by voluntary exertions to relieve some pain. This pain is most frequently about the pit of the stomach, or termination of the bile-duct. Thus it was with this young woman. Epileptic fits generally commence with setting the teeth, by which means the tongue is generally wounded, and with rolling the eye-balls in every kind of direction. Thus it was in the above case. Epileptic convulsions are not attended with the fear of death as in hysteric diseases. Hysteric convulsions are distinguished from epilepsy, as the patient does not lose all perception during the paroxysm. However, it must be noted that the disagreeable sensation in hysteric diseases, is sometimes the cause of true epileptic convulsions, of syncope and of madness."

[*Vid. Dr. Darwin, on Epilepsy; Zoonomia, Class 3rd, I. I. 7.*]

OBSERVATIONS AND PRACTICAL REMARKS ON THE SPOTTED FEVER, WITH DISSECTION.—BY DR. JOB WILSON, OF SALISBURY IN NEW-HAMPSHIRE, IN A COMMUNICATION, DATED MARCH 13, 1813.

THIS dissection, with that published in the Medical Repository, Hexade 3rd, Vol. 3, No. 1, comprehends the most important parts that usually suffer in this disease, which has of late, proved so fatal to the inhabitants of these northern states.

The patient was a female, who died on the 7th of March, 1812, at the age of about twenty-seven years. On removing the sternum, vesicles of air appeared in the cellular membrane. There also lymph was extravasated, of a yellowish colour. Spots of blood were visible on the pleura, seeming to have been effused from ruptured vessels. The blood-vessels of the lungs, and the inside of the pericardium, appeared to be similarly disorganized in various places, more especially in their minute branches.

The pericardium contained nearly half a pint of yellowish serum. The lower edge of the lungs was of a bright scarlet red, and swam in water; while a portion of the organ, cut about two inches above, was remarkably heavy, and sunk in the same liquid. The air-cells were completely filled with a yellowish lymph, which was as fluid as water; except at the lower edge of the lungs, which contained air. The viscus was of a dark red colour, and adhered throughout its whole surface to the pleura and diaphragm; saving the posterior surface, where there was a large collection of lymph, to the amount of three quarts.

The heart and its vessels, were distended to an enormous size, by blood that was almost black; and extravasations appeared upon them, as before mentioned. At its apex there were effusions of blood, and of a yellowish lymph.

The liver appeared of a dark red colour, with large irregular spots dispersed throughout its whole surface. These spots were nearly of the natural colour of the liver, and appeared sounder than any other part of it.

The diaphragm also appeared of a dark red colour, and adhered to the lungs throughout its whole extent.

The spleen had a similar appearance with that of the liver. The symptoms of this disease, were pain of the head, side, or immediately under the sternum; in some instances pain in the ear or any other part. Severe chills succeeded by extreme heat and violent fever, throbbing of the temporal arteries, heat and pain of the head, delirium outrageous and furious, but occasionally low and comatose, with a disposition to sleep, were some of the symptoms. In general there was more or less of a palsy of one side, attended with a numbness of the extremities, the hands and feet quite purple from the torpid action of the capillary vessels, attended with a pricking pain in these parts.

The paralytic affection in the disease was often very considerable, such as a numbness and stiffness of one side of the tongue; a distortion, swelling and loss of sight of one eye, and the mouth drawn to one side. The eye deprived of vision, as far as I have observed, was the one opposite to the side affected.

The skin was of different shades of yellow in different cases; the perspiration was extremely fetid: strangury was a common occurrence. This disease was frequently attended with a cough; the expectoration in about two thirds of the cases was but moderate, and not attended with much difficulty; but in many it was extremely copious, threatening immediate suffocation; and in all the cases I saw, which terminated fatally, death appeared to be in consequence of that circumstance. Men were more frequently affected with this disease than women.

Particular situations, as respects the face of the country, appeared to favour or prevent the disease. Persons living in places where the wind and rays of the sun had their greatest effect suffered most, but where either or both of these, were considerably obstructed by the elevation of mountains, hills or woods, cases of it rarely happened.

Dreadful as was this disease, it appeared to bear a strong analogy to a cold, aggravated to a violent degree by sudden and great changes in the weather. It ap-

peared in all the degrees of violence from catarrh to the plague; the patient dying in some instances in three or four hours from the attack; in other cases he would continue twenty-four or forty-eight hours; but those who were suffocated, usually died on the fifth, sixth and seventh days.

That sudden and frequent changes of temperature should produce a disease so fatal, is what I am not as yet prepared to aver. I am aware that several objections may be raised against such a theory. It is certain that the animal system is capable of sustaining much greater changes of temperature, and that repeated, at shorter intervals than ever happens in our climate without any apparent detriment to its constitution. It is likewise obvious that this disease has not uniformly followed great and sudden changes of temperature; but has been more or less circumscribed in its operations, and has spread progressively from one place to another. Yet that great and sudden changes do produce various diseases, doubtless will be allowed. From several circumstances it appears probable, that the changes of temperature have, for five years past (preceding 1813) been much greater than ever before were known. That many animals expired by its immediate operation is a fact. That the organization of vegetables, suffered a derangement which eventually proved fatal to many of them, is a circumstance that any person may ascertain; and that the cause and effect have followed in progression for several years. Yet it is presumed that our vegetables (without materially injuring them) are capable of bearing greater and more sudden changes than have as yet happened.

It is the occurrence of other accidents, accompanying the cold, which renders the vegetable liable to disorganization, particularly the moist and humid state of the weather, and its temperature should be above the freezing point before the application of the cold, or suddenly rise to it afterwards. If the same causes do not immediately derange the animal organization, yet may not the sudden and frequent vibrations of heat and cold, accompanied with moisture, so debilitate the capillary

vessels, as to produce such a torpor in their extremities, as shall ultimately have that effect?

A livid appearance of the countenance, the extremities moderately swelled and cold, the circulation in the capillaries extremely slow, were symptoms that attended this epidemic, and for several years preceded it. Though every part may eventually suffer in this disease, yet the capillary system appears to be the part that is primarily affected; and all the derangement that disturbs the several functions, and produces death itself, appears to be the consequence of a torpor of that system, as is exemplified where compression of the brain takes place from an engorgement of its vessels, or effusion producing comatose delirium, apoplexy and palsy; effusion in the cells of the bronchiæ, producing suffocation; and occasionally effusion from the capillaries of the stomach and intestines, producing dysentery.

I have seen two cases of effusion in the limbs, and several cases of external effusion of the thorax and eyes. If the above principles are correct, the danger in this disease consists in the interruption of the action of important parts, viz. the brain and lungs. It is then the business of the physician to avert the dangerous tendency of this disease, by timely removing the torpor of the capillary system, by external and internal stimulants: to remove the engorgement of the large blood vessels, which may encompass the brain, lungs, &c. by emetics and warm aromatic stimulants; externally by blisters :* to excite a permanent action of the capillaries on the surface of the body and extremities, by warm applications, such as steam impregnated with stimulating oils, the oils themselves, as turpentine and fir, the warm bath, sal ammoniac, &c.—at the same time supporting the action of the internal capillaries, by spirituous, aromatic and volatile stimulants, in such quantities as the case may require. In the hot stage, cold applications to the head are of great advantage; and a free sweat on the surface when it can readily be produced, is the most sure means of mitigating the disease.

* Applied in particular to the nape of the neck, on the upper part of the sternum, side, &c.

From the above principles it is clear that the event of the disease must materially depend on the treatment of the first paroxysm. If the first cold stage is extremely violent, the patient may not survive, but die apoplectic, from compression of the brain. If he survive the cold stage, we may expect that the hot stage will succeed in exact proportion; and if the torpor of the capillaries has been excessive in the cold stage, we may calculate for excessive action to follow, which will often be attended with effusion of blood and serum from the capillaries, producing compression of the brain and suffocation. If the effusion is not so considerable as immediately to extinguish life, it may be absorbed and the patient gradually recover. Blisters and rubefacients appear to have a good effect in exciting the absorbents. Effusions in the lungs are frequent, but not so much to be dreaded as effusions in the brain. If the quantity is small it may generally be absorbed; if considerable the patient may even survive with proper attention, although it will generally end in a species of vomica. When the patient has suffered from severe pain in the thorax from the first attack, or has been previously weakened in the chest by phthisical symptoms, or has recently been debilitated in that part by pleurisy, the case requires our most serious attention: For, although he may survive the first attack, yet he will be in great danger of suffocating by a secondary effusion of lymph, which generally happens on the fifth, sixth or seventh days from the attack. As far as I have experienced, a free sweat from the beginning, continued for a considerable time, the extensive application of blisters to the thorax, gentle emetics, expectorants, &c. promise to be of the greatest advantage. But here I would ask those of greater experience, how shall we avert this dreadful accident?

NOTES.

NOTE 1. *Exceptions to the above general rule.*

First. People, inhabiting the northern declivity of very elevated situations, have suffered by this disease, when cold and boisterous winds were frequent, from

the north and north-west; and frequently alternated by southerly winds which were warm, damp, and occasionally accompanied with fog. The south wind, no doubt, has been a powerful agent in producing this disease, in all situations.

Secondly. In low situations, having a southern declivity or otherwise enjoying the full influence of the sun, the inhabitants have suffered by this disease, when cold and calm seasons have happened, accompanied with sudden changes of temperature. Here the nights will be much colder, and the days warmer than on the hills, and of course, the vibrations of temperature considerably greater.

Thirdly. In all other situations, where a concurrence of circumstances shall render the vibrations of temperature extremely great and frequent.

NOTE 2. In the month of June last, I was called to a daughter of Mr. J. Weare, aged twelve or thirteen years. She was attacked with severe shivering fits, and fever, with violent pain in her lower limbs, probably from the distention which they suffered, in consequence of an effusion which occupied the right limb, from the trochanter major to the knee; but in the left limb it was principally confined to the leg. By the use of warm baths, impregnated with allum, terebinth, blisters, ointment of cantharides, unguent merc. the effusion in the left limb was absorbed; but that in the right limb, resisting these applications, after thirty-three days, was evacuated by an opening, and the matter discharged, to the quantity of two quarts. About one half of the matter, when discharged, had the appearance of pus; the other was bloody serum, and for several days after the operation the discharge was bloody serum.

The effusion had the appearance of being from the internal capillaries, which are in immediate contact with the periosteum of the femur; yet the bone was not in the least affected, although this matter had lain in immediate contact with the periosteum for more than a month. I have seen several other similar cases, but never knew the bones to suffer.

Description of a Disease which prevailed in the Upper Parts of Virginia, during the Winter 1812-13, and exhibited the Type and Symptoms of the Spotted Fever. In a Letter from Robert Dunbar, M. D. dated Winchester, Feb. 22, 1813.

HEREIN is contained the history of a disease which I presume may be designated a complete Spotted Fever, in the strictest acceptation of the term: a disease new, and which scarcely has occurred in these parts. In the month of December it first made its appearance, in a very respectable gentleman's family I attended. No case then, as I understood, existed in the neighbourhood. No cause could be apparently assigned for its appearance, either as regarded an unhealthy situation, or in the habits or manner of living in the family where it first made its appearance.

The subjects were generally from 12 to 20 years of age. The symptoms were not uniform, but varying in proportion as the disease was marked with malignity or mildness. Its attacks were accompanied with great lassitude, rigour, long continued chills, great prostration of strength, unusual depression of spirits; eyes suffused with a small tinge of redness, accompanied with a glassy appearance; the pupils, in the cases I attended, were but little dilated; stupor, delirium and coma, with pain in the head, stomach a little affected with nausea, occasionally amounting to a slight propensity to vomit, though not arriving to any discharge of magnitude by spontaneous efforts, not assisted by emetics. The patients generally complained of soreness all over their bodies: sometimes that soreness was more immediately confined to the upper and lower extremities, with appearances of a tendency to local inflammation near the joints, which was considered as a symptom rather favourable, as nature seemed to adopt this mode of relieving the system generally, the vital parts particularly, by concentrating the violence of the disease or infection to local situations in the extremities. The patients, in almost every case, complained of their throats being sore, and a difficulty in deglutition of liquids as usual, particularly, in violent cases, when they

could scarcely swallow any. A few hours after the attack, the jaws in some cases were fixed, which rendered all efforts, by introducing medicines internally, nugatory and totally ineffectual, particularly so as to add still more to the distress of the patient, and perplexity to the physician. The head was drawn back, and the spine curved, rather more than in even the worst cases of tetanus; the second day, and sometimes the first day, those symptoms made their appearance. The pulse was irregular, generally weak and often not perceptible; the feet and hands cold, and scarcely any apparent excitement in the system after a small degree of fever, which succeeded when the rigour and chills had subsided. Petechiæ and vibices appeared generally over the body—in some cases they were more apparent on the body, in others on the extremities, which was also considered most favourable: the aspect they assumed was from the dark brown to the florid red colour, which served as a tolerably accurate criterion by which the fatality or a favourable issue of the disease could be prognosticated.

Some survived with the worst symptoms; others died in less than 30 or 36 hours. One of my patients, a young man nearly twenty years of age, healthy and stout, died in that period. I saw him a few hours after he was taken ill, but then I could not get him to swallow any medicine, wine or spirits, in any form.—He was totally insensible. Every function and power of life appeared wholly overpowered by the force and malignity of the disease, which to the general part of the practitioners here was a new disease, even to some old physicians. A general dissolution of the fluids was clearly evinced by the spots (which were from the size of a pistol ball to turkey or buck shot) all over the body and extremities, and a discharge of blood from the pores of the skin in the dead subjects.

The cases I attended, from the symptoms I have partially detailed and enumerated (which is done from memory, as I had no time to take notes on the cases in the presence of the patient) convinced me that no time was to be lost, but that the most powerful means and remedies were immediately to be used. The sto-

mach was toned and sedated by cordial and aromatic mixtures, composed of preparations of cinnamon, peppermint, and the tinct. aromat. of the shops, exhibited in warm herb teas, with a little laudanum, if acute pains existed; changed and compounded in different forms, as the stomach could best retain the medicine. Every means and address I found was imperiously demanded, to enable the stomach to retain the medicines, and to induce the patient, when capable to understand, to take the different prescriptions ordered. The hands, feet, and legs, were well rubbed with warm spirits and vinegar, wrapped in flannels, pressed out of a bitter infusion (of bitter herbs and spirits) standing convenient and kept very warm. As soon as the stomach would admit, wine, panado, and warm toddy, was also occasionally given, regulated in portions and frequency, in proportion to the effects on the system. Though the patient complained a little more after administering any spirituous compound, yet I found their salutary effects, and the system could admit as much wine to be given as in the lowest grade of a typhus or nervous fever. Bark was also given in the form of infusion, and after in substance, sometimes per se, at other periods compounded with crem. tart. and aromatic spices, which I found had a very happy effect in operating gently as a laxative, and as a tonic for the stomach and system generally.

Purgatives were administered of a very gentle nature, when the bowels were considered not sufficiently evacuated by injections. The stupor, coma, and delirium, in the grade they existed, induced me to apply blisters to the extremities, particularly above the ancles, and stimulating synapisms to the soles of the feet. Shaving the head and the application of blisters on the head or neck was contemplated, but from the head being drawn so far back as the patient could not swallow any liquid, unless his head was in an horizontal position, there was a difficulty of placing a blister on the neck in that situation. And finding when the system became toned and stimulated with the medicine, the alarming symptoms became stationary, and began to yield to the treatment adopted gradually. I was induced to omit

blisters to the neck or head. A continuation of the medicines, in the different forms as directed, proportioned to the symptoms and effects (which were always kept in view in all prescriptions and directions, either relative to the administering medicines, or in the directions respecting food, drink or exercise) was particularly and pointedly directed, and effects the most happy and satisfactory resulted from the treatment.

The experiment was fully testified even in the gentleman's own family I first attended. One son was apparently saved, having all the symptoms I have described. His sister, aged about 13 years, was attacked with the same symptoms, but no medical aid was called in, from a belief, that as her brother had overcome the disease, she would also. She died the third day, when the parents thought she was recovering. I never saw her; and her brother, who died after, (the one I have mentioned); I was then called to visit, when nothing could be done with effect for him.

An Essay on Human Teeth, being an Investigation on their Nature, Growth, and Formation, &c.—— By Horace H. Hayden, Esq. of Baltimore.

[Concluded from page 47, No. 1, and p. 137, No. 2.]

IT may be said, that ossific matter is deposited by the membrane also. I am sensible that the vessels that organize a tooth, are surrounded by a membrane of the most delicate texture, and which lines the canal of the tooth; and I shall readily show that the bone (at least in this instance) is not deposited by it, nor by no part of the tooth.

If deposited by this membrane, we have much reason to believe that the entire tooth was formed by it, and, that this filling up of the cavity, is only the completion of its office or operation, which has gradually progressed from the first point of ossification on the pulp.

If this were true, there would doubtless have been

the most intimate and perfect union of this supervening substance that fills the cavity, and the bone of the tooth, composing one uninterrupted mass, which is not the case. This little body of osseous matter that fills the cavity of the tooth, may be easily pushed away when the tooth is split open, and even pushed out by an instrument inserted into the canal of the tooth, which evidently shews that it was deposited and formed, subsequent to the formation and completion of the tooth, and for no other purpose than to preserve the due organization of the tooth or teeth, which would otherwise have been prematurely destroyed by the exposure of the vessels.

This is only one, of innumerable instances, in which we see this maternal care manifested. We see it on the soles of our feet, and those of all four-footed animals destitute of hoofs; in our hands and on our elbows, by the thickening of the skin; on the hinder legs of those animals which often stand erect; as the squirrel, rabbit, hare, &c. Also on the neck and beneath the yoke of the docile and humble ox; and even on the breast-bone of all those fowls that sit upon a roost, where is seen a callous thickening, or indurated skin, to protect the subjacent parts from injury.*

Dr. Blake has (if correct) assigned the crusta petrosa to very important use; for he observes "The crusta "petrosa is therefore deposited for the membranes to "adhere to, *and also to prevent* the sockets from being "injured by the violent motion performed in grind-"ing."

There are many animals, on whose teeth and grinders there is but little or no appearance of the crusta petrosa, and yet we see no injury arising from a deficiency of it.

The grinders of the mammoth (if I mistake not) are destitute of the crusta petrosa, and if it can be considered as necessary to shield the sockets from injury in any one instance, if we may judge from the form and

* How does this tally with the opinion, that aneurismal tumours beat away the bones? See Essay on the Teeth, page 87.

size of the jaw and teeth, and the probable efforts they intended to sustain, we must admit that it is necessary in this case.

The tusks of the hippopotamus are sometimes covered with substances resembling the crusta petrosa (at least that portion contained within the jaw) and a person acquainted with those teeth, will always make choice of these in preference to the others, provided the transverse form suits his purpose; for the crusta petrosa is easily removed, and underneath it the enamel remains untarnished, or in general without stains, and beautifully white. At other times we see them almost entirely destitute of any signs of it.

If our opinions may be regulated by the size and form of those tusks, and the corresponding part, and their probable use, it will readily be admitted, that, if the agency of any substance is or can be necessary to screen the sockets from injury, it will also be in this instance.

In general the size and form of the jaws and grinding teeth, of almost all animals, seem to be regulated by the various efforts and degrees of action, they were destined to sustain. The peculiar conformation and adaptation of the parts are so admirably constructed and fitted to each other, as to preclude the necessity of any aid to prevent injuries to the adjacent parts.

Hence we are left to consider the disposition of the crusta petrosa, on the teeth of different animals, as a characteristic in nature, by which, as in botany, the particular order and class, in the immense chain of animal creation, is easily designated, or pointed out to man.

REVIEW.

PROFESSOR CULLEN'S TREATISE OF THE MATERIA MEDICA, WITH LARGE ADDITIONS, INCLUDING MANY NEW ARTICLES OMITTED IN THE ORIGINAL WORK.

By BENJAMIN S. BARTON, *M. D. Professor of Materia Medica, Natural History, &c. in the University of Pennsylvania.* Philadelphia, *Published by Edward Parker*—1812—2 Vols. 8vo.

THIS comprehensive and useful work, in which much wisdom, and the benefits of a long acquaintance with medical doctrines, had been united to a rich display of the remedies bountifully offered by Nature for the cure and relief of diseases, has been and continues to be after more than 23 years, quite an elementary and necessary book, especially in those countries where British literature prevails. Hence, after three editions have been exhausted, a fourth one was found necessary and has been executed under the direction of one of the eminent Professors of the University of Pennsylvania.

It is not our object, nor do we pretend to *review* a work so well known, and irrevocably established in the highest degree of estimation. We wish only to remark, that of the two great divisions of Cullen's Materia Medica, the first ON ALIMENTS is unconnected with any of those systems or theories, which at one time or another may be superseded by better views and new discoveries. It stands therefore on a solid ground of importance and utility, unassailable by the shafts of opinion and controversy. But the other part of MEDICINES with the same sterling merit of practical utility and of correct composition, is, as it were, engrafted upon a sort of *classification* which is all of a piece with some of the old and rejected Nosologies. Yet during the life of the celebrated Scotch Professor, and the opinion of his contemporaries, it might have been justly entitled to admiration.

When, in our days, Natural Sciences have been so much extended beyond those limits which 50 and 30 years ago circumscribed them; when innumerable facts have been offered to define the agency of simple and compound substances on the human body; when resorting to more general inquiries, we have been taught that health and diseases could not be much controuled by specifics only, nor by the theoretical indications of the old schools; and that sound physiology could not be rescued from practical errors unless it would rest upon the tripod of physical causes, of organic laws, and of analytical experience; it might have been expected that no erroneous method in the very threshold of medical science would now be revived, without instructing those whom it may concern, that it must be rejected or corrected. In other words, proper and apposite warnings should have been devised for the guidance of the noviciate, to whom it was found necessary to point out one of the best sources of instruction, yet leading to mistakes and misapprehensions, against which it was an indispensable duty of a Professor to guard them.

1sdly. That the method of classification of medicines, one part for the *solids* and the other for the *fluids* as adopted by Professor Cullen, is founded upon erroneous principles in physiology, must be apparent when we consider that what we conceive to be *solids* in the human body, could not be acted upon by medicines but by the intervention of the *fluids* with which they are impregnated or moistened and rendered active, and without which they must remain disorganized or inert. Cullen himself establishes the sensibility of those solids to be in proportion to the quantity of blood, of nervous or medullary fluid by which they are pervaded.

On the other hand, whatever alteration of those *fluids* is sought for, or is to be created by the medicines of the 2d section, must undoubtedly be obtained through the agency of internal secretions, through glands and various organs which we suppose to be *solids* themselves; thus the fallacy of this great division is plainly shown, whether it really perverts the meaning which it imports, or is predicated confusedly upon a mechanical agency, which with the exception of a few classes, is incompatible with sound physiology.

2dly. The 23 classes of Cullen, with two more added by Pr. Barton, in conformity to virtues and properties attributed to respective articles, are designated by expressing indications by which the healing art is to be exercised, and to which also the medical tyro must bend his mind. Now, it will require but a little reflection to find that the specific virtues and qualities of medicines, may be variously defined, so as to connect those of one class with the remedies of another. Thus ANTISEPTICA will appertain to the STIMULANTIA; these encroach afterwards upon the DIAPHORETICA, while among the EVACUANTIA, almost all CATHARTICA are ANTHELMINTICA and MENAGOGA. The editor himself wishes to place one of the ERODENTIA among the TONICA, and points out properly, how many articles from different classes, (vid. vol. 11 p. 308) should belong to the SIALAGOGA.

But while we thus demonstrate the failure of a correct system of classification, in the second part of Cullen's Materia Medica, we still more regret to see it remain unaltered and unimproved; as it may expose the young practitioner to a mistaken, and perhaps fatal exhibition of medicines.

We need but to notice cases of hæmorrhage, for which many authoritative writers proclaim the efficacy of ASTRINGENTIA; yet we have seen cases much protracted and rendered alarming by *astringent* medicines, which rather belonged to the class of *tonica*, and which in fact must increase the momentum and activity of the circulation.

We have heard, and witnessed also, the deplorable effects of mild doses of CATHARTICA, or ACRIMONIAM CORRIGENTIA, rapidly acting as SIALAGOGA, with a ferocious degree of inflammation and mortification of the fauces, mouth, &c. !

And in spite of the recommendation offered in this edition of the curative effects of the solution of white arsenic, as a *tonic*, we would dread to dislodge it from the class of the ERODENTIA, and much more to leave it among the ASTRINGENTIA lest the smallest dose when repeated, without daily evacuation, should accumulate to that degree which irreparably destroys the villous coat of the stomach.

We might enlarge these observations on the pernicious effects of an erroneous classification of medicines, by many instances of mistaken management of diseases. But our views on this subject, we are happy to find, were sensibly expressed not many years ago, by the celebrated Pinel, (vide, Nosographie Philosophique, vol 1. p. XCVII.) and some of his remarks we hope may be acceptable to our readers.

" The materia medica had only been a confused assemblage of incoherent substances, mostly known by precarious efficacy, described with the deformities of false ideas and illusory observations. Happily chemistry and botany have by their powerful influence given a new shape to that science. Our schools have exploded even the recollection of all those Gothic abuses.—Mineral, vegetable and animal substances, now proposed as medicines, are as well defined by their external characters, as by chemical analysis. It is therefore but proper to banish from our schools those technical words which have no meaning, although they are existing in popular medical treatises; such as *deobstruentia*, *incisiva*, *attenuantia*, *inspissantia*, &c. all derived from idle theories on humours.—The fallacy of which is amply refuted by physiology and by the history of dieases.

" As soon as our rapid progress required a revolulution in the materia medica, Fourcroy published its preludes in his treatise on the art of knowing and employing medicaments. His views were much further extended and improved during late years, by Messrs. Alibert, Barbier and Schwilgue.....&c. *(Vid. Principes Generaux de Pharmacologie ou de Matiere medicale, &c. par J. B. G. Barbier.—Traité de Matiere medicale, 2 vol.—Manuel Medical, 1 vol. in 12mo par C. J. A. Schwilgue, D. M. &c.)*

We confidently hope that none of these strictures are meant to undervalue the preeminence of Cullen, beyond his method of classification, no more than we would stand as critics of Hippocrates and Aretæus, because the circulation of the blood, and the functions of the lungs were unknown to them. Nor could the Pennsylvanian professor be made responsible for the dangerous imperfections connected with the genuine work of

his venerable tutor; but because having found fault with his physiological opinions, he did not undertake to point out at least those which must confuse the inexperienced reader, and mislead him in the application of the great instruction to be derived from his materia medica. Far from it, the editor has declared to have adopted in his lectures the same mode of classification, to have substituted new classes to those he had abolished, and introduced two of the latter in the present edition. (Vid. vol. 1, p. 106.)

His notes and additions to this celebrated work appear to us rather inconsiderable; although we readily acknowledge that he with a familiar and classical correctness, has extensively enriched the *Catalogus rerum Specialium* with many names of substances for the materia medica which this new world affords as aliments and as medicines. But all the new articles unnoticed in the original work, and announced to be introduced in the first volume, are barely the subjects of short notes, and of a few additions. On the 25 articles in the 2d vol. which are enumerated in the preface as fully treated, we find but brief remarks, references or *particular* opinions thereto, excepting the *argentum*, *plumbum*, and *arsenicum*, to each of which the editor has bestowed a little more than a page.

A few among these we have thought proper to produce in this review, not for the sake of indulging controversy, but as materials for further consideration and remark.

In page 154, vol. 1, the learned editor expresses as his opinion that the strawberry is generally found to be a safer fruit for persons of delicate constitution than the grape. Cullen had however given his decided preference to the latter over all summer fruits, if taken without the husk. A few grapes raised in this country with hard and acerb skins, do not afford a criterion to judge of the wholesomeness of that kind of fruit, yet no addition of liquor or sugar is ever required to eat grapes to avoid danger of indigestion; and few stomachs can with impunity bear a great quantity of strawberries without sugar or liquor, and much less with milk and cream.

In vine countries, all the persons employed during the season of vintage, live mostly upon grapes, and grow fat.

Page 174, we are informed that Indian corn is the most nutritious of all the cerealia. The editor alleges as an experimental fact, that negroes on the plantations could not be so well supported upon a given quantity of wheaten as of Indian corn. Comparative experiments fairly carried on, especially among hogs and poultry, would certainly contribute to settle this question, and be highly useful in an economical point of view!

In page 182, we are presented with some remarks on the *tuber tucca, tukahoe*, without reference to the Medical Repository, the only work in which that American Lycoperdon had been fully described—(vid. *Med. Rep. vol.* 15, *page* 336.) We now take the opportunity to add, that the European truffle, one of the greatest dainties for the tables of epicures, differs from the American, by its brown and almost black farinaceous matter, interspersed with whitish veins. The white kind is common in France and Italy, but is much inferior when boiled, in taste and flavour, to the black. The larger size of the black seldom surpasses the common size of potatoes or a few inches in diameter, and they are generally much smaller than black walnuts. They are obtained by the help of swine, expert in rooting them up from the ground, and from whom the truffle is to be snatched, by offering to the animal, acorns or some other food, before he devours them. Half a peck of black truffles were sometimes sold for a French crown, in the markets of the large cities of France, 20 years ago.

In page 336, vol. 2, Cullen warns us of the danger of employing corrosive sublimate in a large dose, as an emetic; but it appears that Dr. B. thinks, it might be employed with safety, omitting nevertheless to fix upon the dose or proportion that would warrant its exhibition.

That the uterus has formed or become the repository of earthy concretions, as the editor notices in page 420, vol. 2, might readily be admitted, as well in any other cavity or part of the human body. But that from such a rare occurrence, he would wish to reform the arrangement of

the classes of Cullen, and put the *menagoga* immediately before or after the *antilithica*; we are much surprised to find he would have really done, had he not otherwise consulted "convenience to himself." *(Vol. II. p.* 420.*)*

Morgagni (Epistol. XLV. Book 3) mentions that a ball of thread, which a woman pushed up the vagina, and detained there for a pessary, became incrusted with a tartarous matter, to the thickness of three quarters of an inch on every side. He expressly declares (Epistol. XLVI. § 15) that, much as he had dissected, he had never found calculi in the uterus. He quotes, indeed, Hippocrates, Vallisneri, Schenck, Bartholin and Bonetus, as affirming that stones had been actually found in the womb; yet he clouds the whole of these assertions with doubts, arising from their unfrequency, and from urinary calculi being mistaken for uterine stones. This remark applies particularly to living cases, where it is extremely difficult to prove that a stone discharged comes from the matrix.

Haller (Element. Physiologiæ, Tom. 7, lib. XXVI. sect. 3) has a long enumeration of the parts of the animal body, invaded by calculus. The sandy matter settles occasionally almost every where in the human system. Though he mentions these stony concretions as occurring in the dura and pia mater, in the pineal gland, in the eyes, in the lungs, in the arteries, in the heart and its valves, in the veins, in the feet, the omentum, in the villous coat of the intestines, in the mesenteric and bronchial glands, in the liver, the spleen and the prostate, in the alæ vespertilionis, and (*ipsis secundinis*) in the secundines themselves, there is no mention made of calculi in the womb. Yet the author states, that in an individual female, stones came away by the skin, the vagina, the ears, and the eyes. (Ibid. p. 366.)

The classes of the ANTHELMINTICA and ANTILITHICA are the two last and entire additions of the American Professor. There is an incorrect statement in the first, respecting the anthelmintic efficacy of Madame Nouffer's medicine for the tænia, which Dr. Barton supposes to be a composition, of which gamboge, and not the male fern, was the chief and more active ingredient.

Instead of that, the remedy consists in taking three drachms of the powdered root of the fern in the decoction of about an equal weight of the same, or of the lime-tree. A few hours after which, the patient is to take for a cathartic, the following bolus: to wit.

R. Calomel, Scamm. } *aa* gr. xii.
Gamboge, gr. v.
M. *Conf. Hyac. q. s. f. B.*
(Vid. Pharm. de Baumé, Edit. 1780.*)*

That the root or decoction of the fern is a powerful anthelmintic may appear by further testimony. *(Vid. Med. Repos. Vol. V. page* 39, *Vol. VI. page* 167.*)*

There is a great number of vegetable substances in all countries, and in all books of materia medica really possessed of anthelmintic virtues, which it could hardly be the task of every writer to notice. The French keep in great vogue, different kinds of moss, *corallinæ* and the Corsican moss, *Helminthocorton. (Vid. Valmont de Bomare, and the Journal de Phys. for the year* 1782.*)*

But on the subject of anthelmintic medicines we would beg leave to remark, that the best is that always, which can of itself operate as a cathartic; without which its efficacy, if of a mild nature would prove abortive; but if strong, must probably be possessed of some deleterious quality.

The class of ANTILITHICA would have been a material omission in the original treatise of Cullen, had not that excellent physician provided, in his chapter of ANTACIDA, for the best remedies to be resorted to, in all cases of lithiasis; and his Editor, who has been silent upon them, could not offer better ones, nor more than a few vegetable substances. In this penury of the materia medica, it redounds very much to the merit of the Scotch Professor to have so correctly conceived and explained on what principles and by what means the excruciating effects of the stone and calculi could be relieved; that is by antacid and alkaline substances. Like Sheele, Bergman, and Boerhaave, he was convinced that a particular acid, generated in the human system, did agglomerate earthy matter into solid masses, and that such a morbid process must be arrested by

neutralizing or absorbing that acid. Cullen candidly acknowledged his incompetency to explain many circumstances of that phenomenon. But Vanquelin and Fourcroy corroborated the same by the following experiments. *(Vid. Memoirs of the Nat. Institute, Vol. III.)*

They were in search of an agent capable of decomposing the phosphate of lime, which as yet had resisted the three most powerful mineral acids. From the nitric, muriatic and sulphuric acids, the results have been different, but never complete; their desideratum was at last analytically and synthetically obtained by the Oxalic, Acetic and Phosphoric acids. It was further ascertained that the latter only, could by its presence soften the phosphate of lime or human bones. Thereby a great mystery was unravelled to the pathologist, a mystery in the causes of various diseases of the bones and joints from earthy concretions. Whether these and the urinary stone and calculi result from a partial decomposition of the bony texture, or from a solution of phosphate or oxalate of lime existing in the urinary secretions; and whether, in either case a new composition has taken place, by an over proportion of phosphoric acid, these celebrated Chemists could only conjecture, nor will it be in the power of other inquirers to ascertain these and other causes, until more is known of the origin of that peculiar acid, the uric or lithiasic, which is the cement of the urinary concretions, when other morbid effects, the arthritic and gouty diseases may be found closely connected with the same causes. In this point where those questions are left, one principal inference is striking and conclusive, in the efficacy of alkalies and antacids to counteract the predominance of any deleterious acid whatever, without which no earthy concretion could probably be formed, or possibly be brought to solution. This inference has been emphatically ascertained by facts.—(Vid. Med. Rep. vol. 13. page 100, 103.—Vol. 1. N. S. page 78.)

Having been led to make these observations, we merely add, that we should have been highly gratified, if the learned editor had given a more detailed history of the remedies calculated to prevent or remove stony concretions.

In taking leave of this work, we sincerely regret to have remarked in it, an *unprecedented kind of* interpolation of additional articles throughout the original text. It is true they are distinguished by brackets and by stars, but these may be omitted, and so they have been in some instances already. They are marks besides, so similar to those which for other purposes, must frequently be employed in any kind of print, that they singularly confound the attention, as the editor speaks much in the same style as the author; thereby the best work is in danger of becoming spurious, or affecting the reader and observer as if it was really so. The works of departed writers, are, as it were, religiously intrusted to the care of the learned, as the property of present and future generations, even with their errors, imperfections, and obscurities, on which account the interpolations of commentators, interpreters, and editors, should at least be offered in a different type; as for additions, they might have been as easily, and with great propriety thrown to the bottom of the page, or at the end of the chapter.

No new publication better deserves the patronage of the public on account of typographical execution, and with as few material errors as could be expected in a work of its extent. We have admired the choice and neatness of the type, and the quality of the paper. With this, and other works, from American presses, we look for a period, rapidly advancing, when our countrymen shall rival, or even surpass, any of the performances of European type.

MEMOIRS OF THE COLUMBIAN CHEMICAL SOCIETY OF PHILADELPHIA, VOL. I. p. 221.—PIERCE. 8VO. PHILADELPHIA, 1813.

WE learn from the preface to this publication, that the association whose transactions are recorded on its pages, was formed in August 1811. The object of the members was to cultivate chemistry, and promote philosophical inquiry. And such has been their industry,

that the public is already favoured with a book of the papers presented.

The investigation of the internal constitution of natural bodies, is eminently curious and interesting. The application of the laws which govern the affinities of their component particles, to the improvement of manufactures, arts and trades, is additionally important. Whether chemical inquiries are of a speculative or a practical tendency, they never fail to engage the attention of the scientific mind. It is highly gratifying to behold a band of worthies like those before us, labouring to analyze the compounds which they find ready made, to form by synthesis new combinations in the laboratory, and thereby to deduce correct doctrines from the facts which are disclosed. We cordially congratulate them on their noble occupation, and on the progress they have made. We hope they will be persevering and undaunted. And if from this beginning, there shall arise great improvements in theoretical disquisition, as well as in economical exercise, we shall rejoice with a mingled glow of amicable and patriotic sentiment.

The pieces are twenty-six in number. They are occupied on various subjects. They are mostly short, or of moderate length, and seem to be the productions of nine or ten gentlemen. We shall notice some of these performances and their authors.

A prominent writer in this publication is the honorary member, Thomas D. Mitchell, M. D. His contributions are the following: 1. *Remarks on the phlogistic and anti-phlogistic systems of chemistry.* In this, a principal object seems to have been, to shew the fallacy of the means hitherto employed to prove the existence of an inflammable principle; and to state his opinion of the incorrect and unphilosophical tendency of such a sentiment. While we applaud his zeal and ingenuity, we must own we are not yet the proselytes of his argument. Much, much indeed remains to be done, in explaining the phenomena of combustion, and especially of blaze so frequent in burning bodies, before we can deny, or even doubt the existence of a phlogistic principle, common to that part of processes by fire, in which flame is conspicuous. 2. *Remarks on Heat.* In this essay, he states his

disbelief of latent heat in solids. He wishes to confine the term *latent* to the caloric of fluidity; and in this he is right.—He criticises the extension of it to solids, where it is improper, and where the term *absolute* might have been preferably employed. During the present controversies about heat, and while the foremost of the experimenters are debating whether it is a substance or a quality, we are content to leave the discussion where it is, and to let every chemist range for himself in the boundless field of conjecture. 3. *Analysis of a Mineral Spring, at the Willow Grove, Montgomery County, Pennsylvania.* In this undertaking, John Manners, M. D. assisted. The spring is about 14 miles from Philadelphia. The analysis, as it is called, consists chiefly of experiments with the usual re-agents, prussiate of potash, litmus-paper, turmenic paper, tincture of galls, &c. The gentlemen conclude, that the water contains no manner of uncombined acid, not even the carbonic; no copper; nor the smallest quantity of lime; but is impregnated with iron and sulphurated hydrogen; though the quantities and proportions are not told. Hence it is probable this spring resembles the weak chalybeate fountains so frequent in the city of New York, its environs, and almost every town of the adjacent counties. 4. *On Muriatic and oxymuriatic acids, combustion, &c.*—He arraigns the alleged modern discovery, that oxymuriatic gas is an elementary substance, because it is "as ridiculous as it is untrue." p. 106. He calls the professor in the royal institution of London "the champion of the phlogistic system." And charges him with having "endeavoured to discover hydrogen in almost every thing." (p. 103.)*

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* *Note.*—That we may give our readers an idea of this subject, we add the relations of hydrogene to metallic and other bodies, as extracted from Davy's Elements of Chemical Philosophy.

When potassium is treated strongly in hydrogene, the gas contracts in volume, becomes spontaneously inflammable, and gives alkaline fumes in combustion. Messrs. Gay—Lussac and Thenard state that there is a

And he declares " he is not certain that the alkalies have been decomposed (p. 107, note.) We

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solid compound of hydrogene and potassium, which may be obtained by treating the metal for a long while in the gas, at a temperature just below that of ignition.—Division 5th, § 2 art. 8.

Hydrogene has energetic powers of combination; its parts are highly repulsive as to each other, and attractive of the particles of other matter. It enters into combination in a quantity very much smaller than any other substance; and in this respect it is approached by no known body. Division 7, § 1 art. 3.

The metal of ammonia must be supposed to be constituted by 8 of hydrogene and 26 of azote. As azote unites to five proportions of oxygene, it may be supposed to contain ten proportions of hydrogene: and its constitution may be thus expressed, ten proportions of hydrogene and sixteen proportions of an unknown basis. *Ammonium* on the same hypothesis, will consist of 16 unknown basis, and 18 of hydrogene.

Potassium, may in like manner be supposed to consist of 69 unknown basis and 6 of hydrogene.

Sodium, upon the same principles, may be calculated to be formed of 82 basis and 6 hydrogene.

So Tin, may be computed as constituted of 106 radical and 4 hydrogene.

By the same mode of estimation, silver may be ranked at 203 basis and 2 hydrogene.

Sulphur is admitted to contain the inflammable principle, in the proportion of 6 hydrogene and 24 basis:

Phosphorus of 4 hydrogene and 16 basis;

And Charcoal of 4 hydrogene and of 7.4 basis.—Ibid. art. 4.

No great stress, however, is to be laid upon these numbers. They are rather approximations to fact, than any thing else. There may be even more hydrogene than herein stated.

The probability that metals and inflammable solids may be constituted by different and various proportions of hydrogene united to unknown radicals or bases, is strengthened by the fact, that the metals in which hy-

shall not enter the lists with such a resolute sceptic. At the same time we own that we appreciate

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drogene is supposed to be attracted by the largest quantity of other matter, are the least disposed to unite with oxygen and chlorine: and those that are supposed to contain the largest quantity of hydrogene to the smallest quantity of other matter, are the most combustible. And also, those that are supposed to contain the largest quantity of hydrogene, and consequently to retain it with the proper attraction, possess the least specific gravity.

The probability that inflammable bodies contain hydrogene is further increased, by an examination of the analogy which exists between the bodies called oxides, and those denominated hydrats; and also by that of the combinations of chlorine, and of the productions termed neutral salts. Water, for example, cannot be entirely separated from the hydrats of potassa and soda, by mere heat; and the hydrats of lime resemble exceedingly the pure earth itself; now if the oxides of potassium and sodium, are supposed to consist of unknown bases combined first with oxygene, and then allied to water, it may be inferred that neither the oxygene nor the water would quit their connection in either case, without the addition of a powerful chemical agent, and this agent is hydrogene, expelling the oxygene and taking its place, and thereby changing the respective oxyds and hydrats to metallic potassium and metallic lime. In like manner, common salt, a compound of chlorine and soda, without oxygene, has an analogy to sulphat of soda, and other saline bodies known to consist of *acid* and alkaline ingredients; yet if sodium, as before stated, consist of a basis associated with hydrogene, then common salt contains a portion of hydrogene in this way.

Hydrogene united to chlorine, forms muriatic acid gas; the proportions being one and one by volume, and one of hydrogene and 33, 5 of chlorine by weight.

Chlorine is the oxymuriatic gas of the modern chemists. Hydrogene, as just observed, makes of it muriatic acid gas. And muriatic acid gas, is that product which is afforded by the action of oil of vitriol upon sal ammoniac, or on common salt.

the English discoveries higher than he appears to do. But where so many novelties are presented to us. sanctioned by experiments fairly related and frequently repeated, we would consider before we reject, and wait for further evidence before we condemn. For ourselves, we see nothing absurd in the simplicity of what has been denominated chlorine. We believe

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Muriatic acid gas instantly extinguishes flame. It reddens dry litmus paper. It combines readily with atmospheric moisture. It tastes extremely sour.

Chlorine united with hydrogene, thus forms muriatic acid and its gas; and joined to oxygene forms *euchlorine*, or what has been denominated hyperoxygenated muriatic acid and its gas.

Muriatic acid gas does not appear to contain any oxygene. None of its compounds with inflammables or metals will afford oxygene. Even charcoal, though intensely ignited in it, undergoes no change, not even when aided by the strongest powers of electricity. It therefore is to be considered as an elementary substance, at least in the present state of our knowledge.

So there are two acidifying bodies or principles in nature.

Yet strange to tell, it is affirmed (Ibid. art. Iron,) that no combinations of iron with hydrogene, are known. It is likewise affirmed (Ibid. art. Zinc) that zinc has not been combined with hydrogene; nor lead; nor antimony; nor quicksilver; nor bismuth; nor cobalt; nor copper; nor nickel; nor uranium; nor tungstein; nor titanium. But he admits that Tellurium combines with hydrogene, and he allows the same of arsenic and potassium.

In the histories of tin, sodium and silver, he denies that any combinations of hydrogene with either of them exists; but admits afterwards that this very inflammable ingredient exists in them all.

These contradictions, which embarrass the learner, and becloud the science, proceed probably from the haste in which the book seems to have been written. It is to be hoped they will have no place in the next edition.

that hydrogen is an ingredient in most, if not all inflammable bodies. It really seems to us sufficiently proved, that the alkalies have been decomposed. But while we differ on these points, we heartily concur with him in the eulogies he pronounces upon Scheele, Lavoisier, and Berthollet, as great improvers of chemistry. In his observations upon combustion, he states his opinion, "that in every case in which oxygen combines chemi- "cally with another body, the process of combustion is essentially carried on." (p. 113.) He fortifies that opinion by ingenious reasoning, in the course of which he states that "light and heat are," in his conception, "the constituent of every supporter, and of every com- "bustible." (p. 114.) On a question, as yet unsettled by experiment, and of course so open to hypothesis, it seems to us best to forbear further remarks of our own, and to bear with the speculations of our friend. 5. *Analysis of Malachite, or green Carbonate of Copper, from Perkiomen, Penn.* We have samples of this beautiful mineral in our collection. According to our author's experiments, this ore consists of 30 grains of carbonic acid, 68 of quartz and silicious earth, 15 of brown oxyde of copper, and 7 of evaporable matter dissipated during the process, in a parcel of 120 grains. 6. *Remarks on Putrefaction.* After stating certain of the circumstances favourable to this mode of analyzing animal and vegetable matter, and after some observations upon the substances called antiseptics, which have the power to prevent putrefaction, he offers a few desultory propositions on the operation of muriated soda or common salt, in preserving animal and vegetable matter from corruption, and on the action of nitrated potash or saltpetre in reddening meat. As we find nothing conclusive in them, and as we know not how to solve problems so abstruse and recondite, we can do nothing better than refer our readers to the passages of our work, wherein these matters are considered; such as Medical Repository, Vol. 1. p. 41 and seq. Vol. 2. p. 292 and seq. Vol. 3. p. 14 and seq. ibid p. 161, &c.—Vol. 4. p. 91, 94, 149 and 257; Vol. 5. p. 243; Vol. 6. p. 460; Vol. 9. p. 447; Vol. 10. p. 133. We could readily point to divers other pages and tracts, but we content our-

selves, at this moment, with recommending a perusal of the preface to Dr. Bay's dissertation on Dysentery, published at New York in 1797. 7. *Chemical View of Secretion.*—This is an attempt to explain, upon chemical principles, the functions whereby the peculiar fluids of the animal glands are elaborated. We quote the words of Dr. M. on this occasion, (p. 154) where he gives an invitation: "conducted by this torch, enter with me, for a "few moments, the great laboratory of man, and if the "glimmerings of the taper should grow fainter and "fainter, and at last expire, we can only console our-"selves by reflecting that in obscurity we found the sub-"ject, and in darkness we left it." 8. *Analysis of Professor Coxe's Essay on Combustion and Acidification.* The Medical Repository, Vol. 13, p. 355--367, contains a review of the same performance. 9. *Remarks on the Atmosphere.* Herein he inquires what is meant by the atmosphere in contradistinction to atmospheric air, and whether the atmosphere is a simple mixture or a chemical compound. On the first point, there is a verbal explanation; but on the second, the question seems to remain where it was.

Seventy-eight pages of the two hundred and twenty-one occupying the volume, are filled by the preceding memoirs, making somewhat more than one third of its contents.

Another considerable contributor is Mr. Franklin Bache. He is the promoter of several inquiries, such as first, *What circumstances will warrant us justly to reckon any substance a principle of a common property of any set of bodies?* Secondly, *Whether M. Berthollet was warranted from certain experiments in framing the law of chemical affinity, "that it is directly proportional to the quantity of matter?"* And thirdly, *Whether it is not expedient to change certain parts of the chemical nomenclature?* In the first of these, hydrogene is severely reprimanded for its pretensions to possess such a common property. In the second, it is contended that the French chemist drew an unjustifiable conclusion. And in the third, *nitral* acid is proposed instead of nitrous oxyd; *nitrates* instead of azotites; with sundry other amendments.

Professor James Cutbush, of Saint John's College, is the author of two tracts. One of these is *on the Prognostic Signs of the Weather.* This is an instructive paper. It comprehends the methods of foretelling the changes of the atmosphere from the motions and manners of spiders, from the barometer, from the thermometer alone and in conjunction with other instruments, from the clouds, from the hygrometer, and from the electrometer. The good sense and valuable information which distinguish this essay, render it worthy of being read generally by farmers, mariners, underwriters, and all who are interested in meteorology. The other memoir by the same hand is *on the oxyacetate of Iron as a test for the discovery of Arsenic.* Having found that iron and arsenic, in particular states of combination, form an insoluble compound of a brilliant orange tint, this intelligent gentleman proposes a method of employing that attraction to detect the presence of that metallic poison. He directs equal parts of the red or oxysulphate of iron, and of acetite of lead to be mixed together in a sufficient quantity of water. The sulphate of lead, which is precipitated, must be separated by the filter. The oxyacetate of iron passes through the strainer, and exhibits a beautiful reddish brown colour. The solution containing this new compound, when added to a menstruum containing arsenic, gives a fine orange precipitate, consisting of arsenic and iron, in the proportions of 40 parts of arsenic, 35 of iron, and 25 of oxygen.

The oxysulphate of iron was prepared by digesting in a dish, eight parts of the green sulphate, and two parts of the nitric acid; a sufficient heat being applied to decompose the acid. On the representation herein made, the present test promises to be a valuable addition to those already recommended.

We observe two productions from the pen of Joel B. Sutherland, M. D. The former is entitled, *Speculations on Lime;* and the latter *a few remarks upon the Nature of the Nervous Influence.* Various opinions are thrown out on the operation of lime as a cement for stone-walls, and for living bones. It is maintained that nitrous oxyd, formed in the lungs during the act of res-

piration, is a stimulus highly salubrious and necessary to life; and that the nitrous oxyd is precisely the same with the nervous influence. (p. 150.)

This volume also contains two memoirs written by William Hembel, Jun. Esq. The one contains his *Observations upon the formation of Muriate of Potash, in the process of preparing the hyperoxymuriate of potash;* and the other, accompanied by a print, shows *a new method of mounting Wolf's Apparatus, in which the tubes of safety are superseded.* It chiefly consists in a neat substitution of crooked tubes for straight ones, and of a nice adaptation of them to the bottles.

On perusing the contributions of George Ferdinand Lehman, we find his *Thoughts on the principles of Excitability* (p. 75); wherein he gives twenty reasons for supposing that oxygene is the substance from which that principle is generated; and that excitability, instead of being confined to the brain, is diffused in greater or less degree over every part of the animal frame. We likewise observe his *Thoughts on emission of Oxygene gas by Plants*; a process which he believes to be accomplished by their power to decompose water and impure air, and to discharge their oxygen in the form of a vivifying gas.

Before we close the task now before us, we must mention the memoirs furnished by John Manners, M. D. 1. *Experiments and observations upon the effects of light on vegetables, and upon the physiology of leaves.* In this he states a fact, which he had no where observed either in books of botany or chemistry. This was no other, than that all the oxygenous air afforded by the leaves of certain trees came from their *pagina inferior*, or under surface, instead of exhaling from the upper side, as has been universally affirmed. He also observed that the leaves of herbaceous plants emitted vital air either from the upper surface, or indiscriminately from both; and he feels himself emboldened to conclude from his trials, that the two sides of leaves are instrumental in performing the same functions, and not the superior surface only, as preceding experiments have erroneously taught. 2. *On the production of sulphurated hydrogene by the action of black sul-*

phuric acid diluted with water, on iron nails. This is an attempt to form a satisfactory theory, of the extrication of the sulphur in the experiment in which among several plausible guesses, the combustible matter of the cork is supposed, with high probability, to act a leading and important part. 3. *Experiments and Observations on Putrefaction.* The main object of this research is to prove that the presence of atmospheric air is by no means essential to the putrefactive fermentation, and that oxygenous gas when in actual contact with the corrupting body, exerts no influence whatever upon it. With an apparatus specially contrived for the purpose, he has made experiments upon lambs' flesh, wholly apart from the oxygen usually incorporated with water or mingled with air, and he convinced himself that putrefaction went on perfectly well in distilled water, in carbonic acid gas, in inflammable air, and in running quicksilver. On examining the products of the corrupting process, carried on without the presence of extrinsic oxygen, he found reason to conclude there was no ammoniacal gas, no oxygenous air, and no sulphurated hydrogene. But there was an abundance of carbonic acid gas, which owes, as he thinks, its offensive odour, to the fetid oil which it holds in solution.

The Observations of Edward Brux, of France, *upon the effects of various gases on the living animal body*, (p. 158) evince a particular acquaintance with the modern writings upon respiration; very properly tempered by the remark that the presence of a vital or nervous influence necessarily modifies the chemistry of living beings.

We were about to close our review, when we recollected the performances of Samuel F. Earl; one reciting his experiments on a carbonated chalybeate spring, at Bordentown in New-Jersey, and the other detailing the results of the processes instituted by a committee of the Society, upon some ores they had received. They evince industry, though they are of minor importance.

Having thus surveyed the collection before us, we recommend to the votaries of physical science steadily to

consult nature in the great laboratory of creation, as well as in the workshops of the schools. We shall thereby obtain a corps of correct observers, as well as of able experimenters, and from the labours of the two, the materials will be gathered for that sound theory which can be established alone upon a broad and just induction of facts.

MEDICAL AND SURGICAL CORRESPONDENCE.

CASE I. OF THE FORMATION AND GROWTH OF A FŒTUS IN THE MASS OF AN ENLARGED PLACENTA, AND WITHOUT THE MEMBRANES.

(*By Felix Pascalis.*)

Sometime in April 1810, I was sent for to attend on Mrs. ———, who was seized with symptoms of labour. I had dreaded this hour, because I had anticipated that it would be the perilous term of an unnatural gestation, and I will state my reasons for it.

This woman who was delivered by me of a healthy child, two years before, had not any remarkable defect of body nor of constitution, yet several of her child-bearings had been unsuccessful; one of them, I knew, was a case of deformity. With these discouraging facts, and other moral causes operating unfavourably on her delicate health, she had required much care and attention during her last pregnancy; but in this instance, and until she arrived at her full term, medical aid was incessantly engaged for the relief of unnatural and unusual irregularities. The first was a considerable degree of plethora, causing a great suffusion in the eyes and skin, and a morbidly flushed countenance. Her pulse habitually full and accelerated, was seldom below the febrile point. Three or four times, during the short space of five months, I had been obliged to bleed her; towards

the end of her pregnancy, that plethoric state increased very much, for there is a law of consentaneous action in the human system which extends to the whole, the morbid action of a part. The second was the increased bulk of her body from the breast to the pubes, without circularity of the linea alba, so as to present a vertical enlargement rather effected on all the parietes of the abdomen, nor was its greatest diameter collapsed at the end of gestation. A fetid and purulent kind of leucorrhœa constituted during the last month, another symptom or harbinger of a preternatural birth, which the absence of quickenings, and the incessant uneasiness of the woman still rendered more probable. In her labour she appeared excessively weak; her pains were not increased by that lively action which is characteristic of a healty state of the organs. It was time at last to make an examination *per os tincæ*.

A naked and flattened mass was felt emerging out from an envelope, of a thick and spongy nature. It had a line of division in the centre formed by the close contact of the two edges, of a hard and cartilaginous substance. No membrane was interposed, and I ascertained that no effusion of water had taken place previous to labour. This, advanced very slowly after seven or eight hours, during which I never was able to refer the above presentation to any fœtal part, that I might judge what best could be done, so as to direct its descent to the lower brim. But at this approach I found at last it was the breech of a deformed fœtus. Being able to pass two fingers on the right hip, and unfold the lower extremities, appendages of thigh, legs, and feet that were flattened and distorted, as crushed by a violent pressure. The trunk easily descended; the neck was so small that apprehending its separation from the head, I hastily endeavoured to bring the head on the breast, not by introducing a finger into the mouth, for there was none, but by pressing and pulling in some cavity of the face; and the most horridly deformed birth was at last effected. The upper extremities were like the lower, stiff at the joints, but flattened by pressure which had produced two edges along the limb. The trunk of the body having a very contracted pelvis, appendages only of ribs on

either side of the breast having no sternum, resembled an oval and distended pouch; its funis was thinner than usual, and the head of an ordinary size, was also deformed on the face by the effect of great pressure, which left of the eyes, of the nose, and of the mouth, nothing but closed appendages and cavities, all propelled as it were from one side of the face to the other.

The expulsion of the after birth was soon attended with no inconsiderable degree of flooding, and was preceded by an adhering oblong and white pouch, of about 8 and 4 inches in its diameters. We opened it to ascertain that it contained nothing but a watery fluid. The remainder of the secundines was the mass of the placenta itself, so overgrown as to line the whole cavity of the uterus. When loosened from its points of adhesion, it seemed that many minutes elapsed before it could be removed.—It filled a large bason, and could not be much below the weight of 10 or 12 pounds.—It was remarkable not only for its large structure composed of innumerable vessels, but by a perfect similarity of organization to an ordinary placenta, although it was perhaps of a softer and more loose texture.

It is readily supposed that the patient remained in a state of great weakness and exhaustion. To it, she owed perhaps, an abatement of flooding, which by continuance, might have become alarming; the more so that a local disease really existed in the right ovarium, which was much hardened, enlarged, and painful to the touch. I found it expedient not to keep up more action than necessary to promote the resolution of existing morbid congestions; yet much was to be provided for, to oppose the progress of putrefaction, which might have been rapid and fatal in a case like this. Her low and weak condition remained long aggravated by a daily fever, but she perfectly recovered at the end of forty days.

REMARKS.

No fact could more emphatically point out to us that the use of the waters of the Amnios in the economy of gestation, to protect the forms and growth of the fœtus,

instead of affording nourishment to it, as many physiologists have supposed. In the above case the fœtus had grown to its size, without the help of waters; nay, his mouth was not even opened to receive them. On the other hand, its compressed situation in the mass of an enormous placenta had deformed and crushed all the limbs, and no doubt had checked the further completion of the bones of the trunk. It may be objected that in cases of extra-uterine gestation, the fœtus has grown in the abdomen frequently well formed, although it must have been compressed by the surrounding parts. The case of Mrs. Calvert, as described by Mr. Wm. Turnbull, *(vid. Case of extra-uterine Gest. by W. T. Lon.* 1791*)* is certainly the best in point. But the pressure in the abdomen, and in the middle of so many yielding parts, cannot in the least be compared to that which the above fœtus received in the more reduced dimensions of the uterus, so much filled by an overgrown placenta. Besides, the fœtus of Mrs. Calvert was by no means perfect in its form, for it is said, "that the whole body (alluding to the skin) was compressed into numerous large folds."

We find in this surprising and almost unexampled case,* various subjects of instruction, shewing the respective powers of the organs of gestation, as by morbid causes, their functions have been inverted. The pouch of the amnios and chorion, is certainly not an appendage of the human ovum. It grows out of the placenta, just as the bud of a tree becomes the parent of a bunch of flowers, which will not grow from the other. The membranes are not contemporaries of the egg, which finds itself wrapped up by them as soon as the surrounding coagulated lymph has acquired the solidity of one or two membranes. The egg also contains in itself all the elements of future formation. It acquires none from the surrounding parts; and the first filaments which it projects to form a funis and a placenta, with which it will receive the means of growing, are equally of its own essential and primitive power, which has been put in activity by fecundation.

* I know one case only, of a similar formation to the term of three months. In Lossius, Observ. Medic. 14, l. 4.

In fine, the placenta had taken the place of the membranes, and lined the whole capacity of the uterus; because no resistance had been opposed to its growth, by a previously existing pouch, always distended with a fluid, which cannot yield any more space to it, than what can be encroached upon by the elasticity of the respective membranes themselves and of the uterus.

The practitioner, in this instance, derived great advantage in his prognostic of an unnatural gestation, from symptoms he has described and enumerated; for he could provide in time for that kind of assistance during labour, which effectually supported the courage of the patient, and kept her, a long time unacquainted with the distressing circumstances of the birth.

Case No. II.

Of a lacerated and penetrating wound in the abdomen, successfully treated by Dr. T.

Washington, M. T. April 30, 1813.

A son of E. J. aged 8 years, in climbing a tree set his foot upon a dead branch, it broke off a few inches from the body of the tree, and as he fell, the snag entered the scrotum, laid bare the left testis, tore the skin and muscles for three inches, entered his belly and suspended him as upon a hook. The little boy had presence of mind enough to know his dangerous situation, and clasped his arms around the tree for support. He was alone at the time, and remained in this situation upwards of half an hour, when a neighbour passing by, heard his cries, went to his relief, and carried him home. Doctor T. being sent for, arrived about three hours after he was brought to the house, and found nearly all the intestinum tenue protruded, inflamed, and dry. Upon examination he found the snag had passed between two folds of the intestine, bruised the colon, and had struck the spine just above the left kidney. Looking at the snag, which was cut off and brought to the house for that purpose, the Doctor was convinced a part

of it was left within the abdomen. Upon further examination, the intestine being out all the while, he found the piece of wood at the left abdominal ring, where it had settled after the protrusion of the bowels. He enlarged the wound, and extracted the piece of wood, which measured one inch and a half in length, and one inch thick. Being satisfied that no other extraneous body remained in the abdomen, he replaced the bowels, closed the wound with six stitches, adhesive plaisters, a compress and bandage. He was plentifully bled, and ordered to take small doses of senna tea, until a discharge should be procured from the bowels—the dressings to be frequently wet with diluted spirit—the patient to be kept perfectly quiet in a well ventilated room.

30. Was very restless during the night—no alvine evacuation—urine high coloured—continue the senna, and to drink copiously of cold water.

31. The senna operated last night—fever high but not so restless—diet spare—perfect quietude enjoined.

Sept. 1. Removed the dressings—adhesion has taken place, leaving only half an inch where the belly was perforated. Took out the stitches, and dressed with strong adhesive plaisters and bandage.—Bowels open—little fever.

2. Bowels open—fever abated—quite easy but sore.

4. Bowels open—no fever—the sore looks well.

7. Free of any complaint—sore nearly closed—dressing as usual.

13. Sore entirely closed, and the boy quite well.

REMARKS.

Although lacerated wounds are badly calculated for adhesion, yet the above case should teach us not to despair, and if the sides of the wound cannot be brought together as smoothly as those made by a cutting instrument, the surgeon should attempt to close it by the adhesive inflammation, especially if the season be hot and sickly. The case of this little boy gives encouragement, and although the thermometer was on no day lower than 80°, and sometimes as high as 90°, yet by careful management, he properly recovered in 14 days.

Case III.

Of Ovarian Dropsy successfully treated. Communicated by J. Mace, M. D.

Frederica, Del. May 25, 1813.

Gentlemen,

In your new series of the Medical Repository, Vol. 1. No. 2, p. 81, I have read with pleasure an account of a case of Ovarian Dropsy cured by *rubigo ferri* and sulphat of iron. In the year 1811, I had a patient under my care affected with this complaint as described by Burns in his Principles of Midwifery. After various medicines had been tried for several months and with little benefit, I directed the following:

R. Ferr. Vitriolat. (Sal Martis) ℈jj
Kali preparat. (Sal Tart.) ℈j
Tinct. Scillæ
Spt. Nitri Dulc. } *aa* ʒ iij.
Tinct. Opii, gut. 70.
Aquæ Puræ ʒvi.
M. Ton. et Diuret.

Two table spoonfulls of this medicine were taken morning, noon and night, observing to shake it up previously. The patient felt better soon after commencing its use, and although very much reduced, she regained her strength, became rather corpulent, and acquired a healthy complexion.

From thirty to sixty or more drops of the Essence of Peppermint should be mixed with the water used in this preparation, before the other ingredients are added. This will lessen the disagreeable taste of the medicine, and make it sit better on the stomach. Mint water was directed in the original formula.

This prescription is taken from Dr. Magennis, who disapproves entirely of emetics and cathartics in dropsical cases, but relies on the efficacy of the most powerful and permanent stimuli joined with active diuretics, and hence he adopted the mixture under consideration. The strength of it was gradually increased, if there was no amendment in a few days. The patients were allow-

ed a pint of wine daily, and nourishing diet in small quantities frequently repeated. A common drink, composed by boiling two drachms of cream of tartar for a few minutes in a quart of water with a little orange-peel, sweetened with honey, was taken without restriction. This however, is most proper when costiveness prevails, and should never be used when the bowels are in a laxative state. In case of a diarrhœa, which Dr. Magennis found was brought on by using purgatives too freely, he gave the cretaceous mixture, tinct. catechu and opium to restrain this complaint, before commencing with the chalybeate diuretic mixture.

For restraining diarrhœa in dropsical cases, I have not found any remedy equal to the Sulphat of Zinc (white vitriol) given in pills of two grains each, combined with a fourth or half a grain of opium, and repeated every three or four hours. *In ordinary cases of diarrhœa even after the failure of other medicines, this remedy is also the most successful.* If the stomach is affected in these instances, which frequently happens as a consequence of the disease, and sometimes is the case when the discharge by the intestines is restrained, or if acidity prevails or the complaint is severe, from a fourth to half a grain of calomel should be combined with each pill, and continued as occasion may require; after which the mercurial medicine may be omitted, and the pills taken without, till the cure is completed. Receiving any thing cold into the stomach appears to be always hurtful in diarrhœa, and should especially be prohibited during the use of the calomel.

Dropsy seems generally to depend upon an exhausted state of the system, requiring a tonic and invigorating plan of cure. Cases may have occurred to other physicians of a contrary nature, requiring bloodletting and other depleting remedies, but I have never seen such, in the course of my practice, nor do I expect to meet with them. The chalybeate diuretic mixture of Dr. Magennis appears well calculated to be successful in this disease, as it evacuates the effused fluid, and also strengthens the system. In all cases in which the effusion is not so great as to oppress the stomach, and occasion such a nausea that the medicines cannot be taken and

retained, I believe it will be found a powerful remedy. I have succeeded in some of the worst stages of Anarsarca with this medicine, and from the experience I have had with it, I should rely upon it in preference to any other hitherto discovered in ascites and hydrothorax when curable. Dr. Magennis found it particularly successful in ascites. In cases that are incurable it seems to be the best palliative. It is a powerful diuretic. May not this virtue be owing in part to the chalybeate in the composition, as the *Tinct. Ferri Muriati*, a preparation of iron, has been very successful according to Mr. Cline, in occasioning a flow of urine in cases of dysuria? However this may be, the permanent tonic effect of the chalybeate medicine, seems absolutely necessary to remove the existing debility, and prevent a recurrence of the effusion in dropsical cases.

I hope that no physician will object to the remedy which I have recommended on account of its being a mixture of several ingredients. An exuberance of composition was the prevailing error of a former age, and perhaps a fantastical desire to abridge and simplify every thing is the fault of the present.

Dr. Wilson in his Treatise on Febrile Diseases observes, that "the greater the number of cathartics we combine, the more certain and easy their operation generally proves." Ample experience has established this as a fact; and is any physician prepared to say that a judicious combination of sudorifics or diuretics is not more certain in producing the desired effect than the exhibition of a single article? I presume not.

Case IV.

A remarkable Case of idiopathic Disease in the Heart. In a Report of William Van Deursen, House Physician of the New-York Hospital,—to Samuel L. Mitchill, attending Physician, &c.—Dated July 6, 1813.

According to your request, I have noted the case, with the appearances upon dissection, of a patient late-

ly under your care in the New-York Hospital. The brevity of the history of his disease, previous to his reception, was owing to his inability to communicate it. But as far as has been in my power, since that time, I have particularized all the important occurrences. You will immediately observe, Sir, the resemblance between the symptoms of the present disease and that of William Whipple, Esq. recorded in the 13th Vol. p. 174, of the Medical Repository, and annexed to the review of Warren's organic diseases of the Heart. Though the symptoms were different, still the phenomena of the diseases were, in various respects, analogous. It will be seen then, that dissimilar affections of the heart, may produce similar derangements in the animal economy; and that they may excite symptoms also, which may lead the incautious practitioner to form a very incorrect diagnosis.

Robert Smith, born in Pennsylvania, aged 31 years, seaman, of a robust make, was admitted on the 25th of June, 1813, with symptoms which seemed to characterize hydrothorax. His respiration was extremely laborious, and appeared to be carried on by the ribs only. His countenance exhibited a livid appearance, and manifested that the blood did not undergo those changes, which are produced by a natural circulation through the lungs. His extremities were cold, and of a purple colour. His pulse was very frequent, small and irregular. The skin was much below the natural temperature, and dry. Bowels loose, tongue furred, and muscular action very much depressed. The patient was unable to lie in any position, and the only posture, in which he could find the least relief, was leaning forward with his face on the bed, and his knees on the floor. The stomach was very irritable, rejecting almost every thing which was swallowed. With these symptoms, and with the presence of general anasarca, it was presumed he laboured under effusion in the chest; and with these impressions he was prescribed for. He had complained of an affection of the chest, for 15 months previous to his admission, and during the last three, it was peculiarly troublesome, attended also with pain in the loins. A cough had accompanied the disorder, and the con-

tents of the stomach had been frequently rejected. He had applied before he came hither for medical assistance; but, little more than cathartic remedies had been administered.

At the time of his arrival at the Hospital, owing to the exertion of getting there, he was very much exhausted, and the pulsations at the wrist were scarcely perceptible. His countenance was livid; strength depressed; and he appeared to be in *articulo mortis*.—Some warm wine was immediately given to him; a sudorific anodyne draught was afterwards directed; and he was placed between blankets to warm him. The powers of life soon recruited a little: he slept for a short time; and his pulse became more distinct. In the evening his difficulty of breathing increased, and his situation became extremely distressing. Antispasmodics, with anodynes were ordered, and a blistering plaister was applied to the breast. The antispasmodics were repeated without producing any good effect; but upon the action of the epispastic, he said he experienced a mitigation of his symptoms.

26th. Passed a sleepless night. Breathing less laborious. Pulse more distinct, though not very rapid; and small. The blister was dressed with the ung. epispast. and three grains of squill and one of calomel were prescribed every four hours, and gin toddy for drink.

27th. Breathing less oppressive. Countenance still livid; stomach very irritable; pulse as yesterday; bowels loose; quantity of urine very small. His remedies were actively pursued.

28th. Difficulty of breathing returned; rapidity of the pulse increased; and his condition was now intolerably anxious to himself, and deeply affecting to the spectators. The antispasmodic mixture was administered every two hours; the pills were continued; and two drachms of the ung. merc. fort. were rubbed on the inside of the thighs, three times through the course of the day.

At 8 o'clock, P. M. the patient walked about the ward, in great agony; and at 9, he died, with all the appearances of suffocation.

As the peculiar violence of the disease indicated the

existence of some other affection than that for which he was first admitted, your recommendation, Sir, that the body should be examined, was accordingly executed, with the assistance of House-Surgeon Hasbrouck, when the following morbid appearances were observed.

The first observation that was made upon surveying the cavity of the thorax, was the remarkable vascularity and distension of the pericardium, which being opened discharged a small quantity of a yellowish fluid, and exhibited the heart, at least double the size of this organ in its natural state. It was of a dark brown colour, and connected by slight adhesions to its capsule. The following is the result of the examination of this viscus out of the body. The two auricles and right ventricle were all found in an apparently sound state; but upon opening the left ventricle, the parietes of this part of the heart, were considerably thickened, and changed in consistence and colour. On the posterior surface of the cavity, there were appearances of ulceration, or rather erosion, extending from the valvulæ mitrales, to nearly the extremity of the ventricle. This disease occupied half the circumference of this part, embracing also the septum ventriculorum. Upon cutting into the heart in this direction, a dense, yellow, caseous matter, of the thickness of half an inch, was found to occupy the same extent that was marked by the erosion. The ventricles were distended with firm, black blood; the auricles were empty. The valves appeared to be sound. There were not the least appearances of effusion in the cavity of the thorax.

The pleura was of an unusual thickness, and marked by numerous red vessels. The lungs were similar to those in persons who had died of pneumonia typhoides, being of a firm, resisting texture; not collapsing when the cavity of the chest was opened; firmly and generally adhering to the ribs; and distended with a yellow frothy effusion. On their posterior surface, there was a deposition of a yellow, gelatinous semi-transparent substance, of almost half an inch in thickness.

The abdomen also opened to our view diseased appearances. The stomach was greatly distended with air, and exhibited slight symptoms of inflammation.

The spleen was of an uncommonly large size, though of a natural colour.

The liver was altered in its texture, resisting pressure, and not being of that friable nature, which characterises this organ when in a healthy state. Its colour was changed to a dark brown, and on the under surface it was intersected with white lines. There were no vestiges of the natural fissures, but it was one uniform mass, connected to the diaphragm not only by separate ligaments, but by general adhesions. The remains of the umbilical vein, entered at the anterior edge, through a foramen. The gall bladder was distended with healthy looking bile. The other abdominal viscera were of the ordinary appearances.

I am, with respect, yours, &c.

W. VAN DEURSEN.

NATURAL HISTORY.

(Read before the Class of Natural History, 29th June, 1813.)

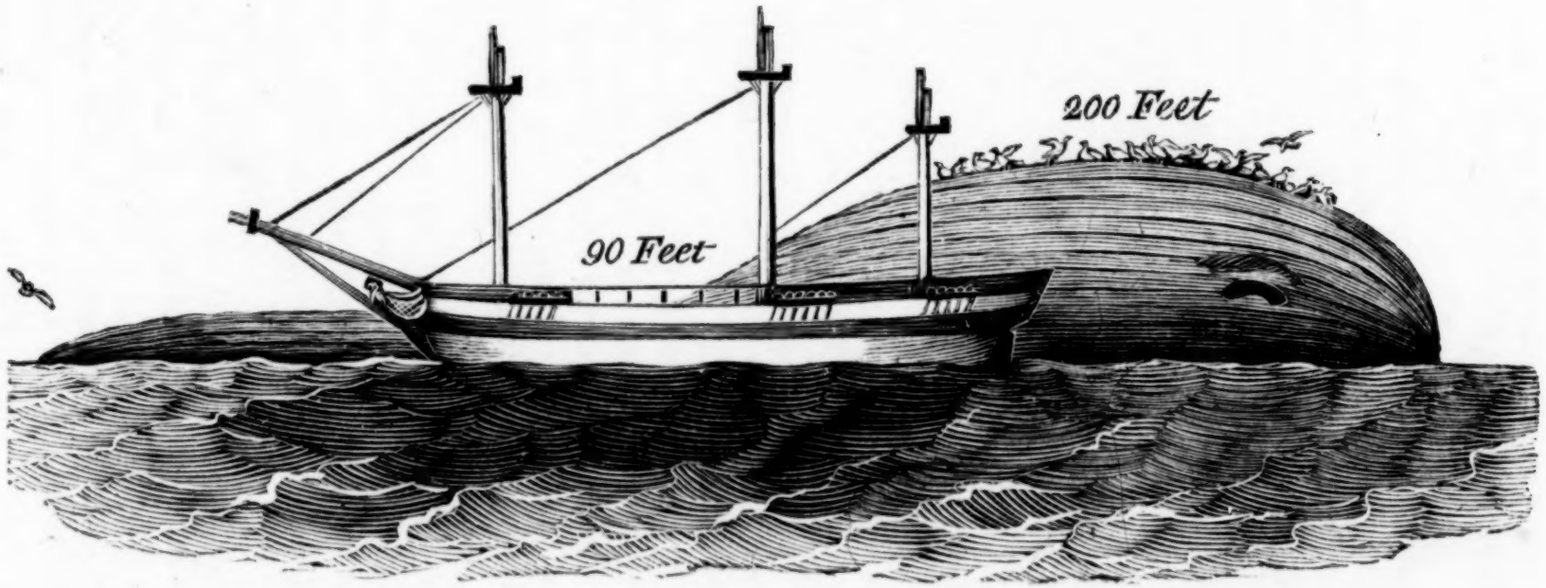
Facts and observations showing the existence of large animals in the ocean, different in their shapes and manners from whales, and frequently exceeding whales in magnitude. In a letter from SAMUEL L. MITCHILL, *Professor of Natural History in the University of New-York, &c. to Baron* LESCALLIER, *Correspondent of the National Institute, Consul General of France in the United States, Commandant of the Legion of Honour, &c. &c. dated New-York, 21st June,* 1813.

(With a Plate.)

DEAR SIR,

MY attention was lately called to the consideration of the animal monsters and prodigies of the ocean, in consequence of a report made to the public by certain persons, who arrived at New-York after a voyage from Lisbon. In April, 1813, captain Merry, of the ship Niagara, gave to the printers the following extract from his journal:

" April 8, lat. 43°, 40′, long. 65°, at meridian, saw a " large lump on the horizon, bearing N. W. distance " 6 or 8 miles ahead, which we supposed to be the " hull of a large ship, bottom up—when within gun " shot of it, discovered that it had motion, and on a " nearer approach found it to be a fish apparently " 200 feet in length, about 30 broad, and from 17 to " 18 feet high in the centre, was covered with a shell " similar to the plank of a clinker built vessel—near the " head on the right side was a large hole or archway



APPEARANCE OF THE (supposed) *SEPIA OCTOPUS* IN RELATION TO A SHIP AND A WHALE.

" covered occasionally with a fin which was at times 8
" or 10 feet out of water—intended to have sent the
" boat to make farther discoveries, but was deterred
" from the dreadful appearance of the monster."

This publication excited considerable inquiry, and many expressed their doubts as to the reality of such a creature. To remove all hesitation about the matter, Samuel G. Bailey, late master of the ship Amsterdam Packet, William L. Handy, late master of the ship Lydia, and Adam Knox, late master of the schooner Augusta, all of New-York, and passengers on board, declared upon oath, that " on the 8th day of April, being
" in lat. 43°, 49′, long. 67°. at meridian, saw a large
" lump on the horizon, bearing N. W. distant 6 or 8
" miles, which they supposed to be the hull of a large
" ship, bottom upwards. When within gun shot of
" it, discovered that it had motion, and on a nearer
" approach found it to be a fish apparently about 200
" feet in length, about 30 broad, and from 17 to 18 feet
" high in the centre, covered with a shell similar to
" the planks on a clinker built vessel. Near the head,
" on the right side, was a large hole or archway, cover-
" ed occasionally with a fin, which was at times about
" 8 or 10 feet out of water. Intended to have sent the
" boat to make further discoveries, but was deterred
" from the dreadful appearance of the monster, hav-
" ing approached within thirty yards of it."

On conversing with captain M. on the subject, I had reason to believe, that he and his passengers were not deceived. The floating mass was clearly distinguished as being neither a wreck, nor a dead whale, nor an ice island.

There were birds of various species on its back, settled as if to rest themselves. And the observers thought it appeared in some measure to turn itself obliquely towards the ship as she sailed by.—[*The annexed print will give some idea of the relative sizes of a ship, a whale, and this creature.*]

The conversations excited by this narrative brought out more testimony concerning the existence of huge

and undescribed inhabitants of the sea, than I had supposed it was possible to have produced. I shall name to you a few of these witnesses, and submit the substance of their evidence; assuring you at the same time, that the whole is of the most respectable character.

Captain Whitlock declared to me that in 1794, he was engaged in the trade between New-York and Canton. As he was sailing from the Cape of Good Hope toward Van Diemen's land, and not very distant from the islands of St. Paul and Amsterdam, he saw an opake and figured body in the water. It excited his curiosity so much that he ordered the ship to be steered as near as one hundred yards to it. He considered the occurrence important enough to be entered on his journal. That he might observe the better, he went aloft. He satisfied himself that it was an animal, and that it had a slow and wallowing motion. When first seen, it was low in the water; but gradually rose to within six feet of the surface, as nearly as he could judge. There was no doubt that it was alive; for he discovered a sort of flaps resembling in some degree the wings of a skate-fish. And when the vessel came up, and got abreast of it, an alarm seemed to have been excited, inducing it to settle away and sink. He thought it about as extensive as the floor of a large barn, and of a roundish and convex form. It did not appear to be covered with a shell or buckler like a tortoise, but to be naked and more soft, flabby and leathery. The skin was spotted with something like eyes, about a foot from each other.

Captain Conman, a navigator in the China trade, from New-York, discoursed to me of many extraordinary and unusual appearances at sea. He was perfectly aware of the mistakes that might arise from looming, and the deceitfulness of the medium through which objects are seen. He made proper allowance for the erroneous judgments men might form from transient surveys of objects, where a log with three birds upon it had been conceived to be a vessel with three masts. And he knew mankind well enough to be satisfied that their prejudices and misapprehen-

sions would be sustained as facts, by the strongest assertions,—still he said, that on voyages beyond the Cape of Good Hope, he had repeatedly seen animals of an extraordinary size and figure in the ocean. They were certainly not common whales, or cetaceous animals of any known species. They rose easily and gradually towards the surface.—They seemed to be covered with scaly spots resembling limpets, barnacles, or creatures of that order adhering to their skins. But they did not spout nor snort like whales; nor did they sport, play, or exhibit the lively tricks of whales. And still, captain C. knowingt hey were not whales of any species that he was acquainted with, supposed they might be individuals of some strange and undescribed sort of cetaceous animals. It was certain, he thought, that there were animals of an astonishing magnitude and terrifying appearance in the ocean; for one of them once rose many feet above the water a short distance from the bows of his ship, when he had a fair view of it. Yet, supposing the whale to be the only family, to which he could refer it, he had concluded it so in his own mind; and of course had made no laboured researches concerning this stupendous phenomenon, or indeed occupied his thoughts much about it.

Michael Hogan, esq. told me, that in the year 1795, he saw an animal of extraordinary shape and size, in the Northern Atlantic ocean. He was on board a ship, in about 54° North latitude, and about sixty miles west of Ireland. He and the other persons with him had a fair view of it through good Telescopes, at about two miles distance. They were all convinced that it was a living creature; and as near as they could form an opinion, at least three times as large as a whale: its motion was very evident. Its surface seemed to him to resemble the hide of an alligator, in its peculiar imbricated and scaly appearance. It was perfectly distinguishable from every kind of cetaceous fish: for having been accustomed for twenty years to maritime life and the scenery of the ocean, Mr. H. was perfectly acquainted with the figures and exhibitions of whales, in almost all latitudes. He had no doubt of the exist-

ence of animals in the sea, incomparably larger than whales, and that this was one of them.

Edmund Fanning, Esq. an experienced and intelligent ship-master, informed me, that in the year 1792, he was navigating the Atlantic ocean, off the Rio de la Plata, in South America. One day he saw something extraordinary above the surface of the waves, resembling a broad and high rock. He immediately sounded, and found the depth of the water to be one hundred and twenty fathoms. The sea was very rough, and the billows beat against the object he had descried. On a nearer approach, and after more careful examination, he became convinced that it possessed a motion of its own. There was no such rock marked in the charts. He concluded it to be a prodigious animal. Being satisfied at the same time it was not a whale, he manned his boat, and went in person to explore it. The wind however was so violent, and the waves so tempestuous, that he could not effect any thing; and after exposing his life to imminent hazard, regained the ship, without being fortunate enough to make a more circumstantial report. Captain F. was sure the body moved sensibly to windward; and consequently was neither fixed to the bottom, nor floating at random on the surface. His nearest approach to the creature was about two hundred feet; and he could of course, observe distinctly with the naked eye. The most elevated part seemed to be at least fifteen feet above the sea. The following is the entry, made at the time, in the ship's log-book.

"Wednesday, August 1, 1792, at 3 P. M. saw a "Sea Monster, whose head was like a ship's long-boat "bottom up. His body larger than any ship's bottom. "Lowered boat, and like to got swamped. He was "covered with barnacles. His body, should say, three "hundred feet in circumference. Latitude 35°-9′ South, "longitude 59°-41′ West, blowing a gale at the time; "ship laying to."

With such a weight of evidence before me, I thought the matter deserved a more full investigation. I accordingly undertook it with such means of information as I possessed. It was my particular desire to ascertain the place these animals occupied in the system of Zoology.

Many parts of the Mollusca order of animals were left by Linnæus in an unfinished state. The Coriaceous, or tough-skinned Molluscas, had been arranged by him under one genus, called Sepia. But the acute and perspicacious Lamarck, who has investigated the history of these creatures since, has divided the genus into three, to wit, the *cuttle fishes* (Seches) having ten arms and bony scales; *the squids* (Calmars) having also ten arms, and merely a horny plate giving stiffness to their backs; and the *Polypuses* (Poulpes) which have but eight arms, and a rounded body without either scales or plates. There are some other marks of difference, both external and internal.

Under the latter of these genera, Lamarck places the huge mollusca, the sepia octopus of Linnæus; denominating it *le poulpe commun.* The whole history of the Molluscas has been exhibited in a new form by DENYS MONTFORT, in 1802. In his Histoire Naturelle, published that year in Paris, his particular object seems to have been to add supplements to Buffon, and to fill up the omissions of Sonnini, so that the student might have a complete course of Natural History, by the perusal of these several setts of writings.

Mr. Montfort has given a descriptive and learned account of this extraordinary creature; one of the most bold and voracious of the animal race. (32d livraison, p. 113–256.) He has embellished it with figures, done from the life. And indeed treated a subject of great curiosity in such a manner, as to render it eminently instructive and entertaining.

Mr. Montfort then ventures upon a discussion of greater difficulty. This is nothing less than an attempt to prove by an examination of facts, that the Sepia octopus, or probably one of its tribe, grows to an enormous size, and becomes the largest save one of the animal creation. Whales are but small, in comparison of the *Poulpe Colossal*, or Colossal Polypus. He thinks such a being has an actual existence, and that there is ground in reason and fact, to believe the history of the *polypus monstrosus* of PLINY; the *polypus ingens* of ÆLIAN; the *Xiphias* of OLAUS; the *Cornet* of the FRENCH SAILORS; and the *Ankertroll* of the DANISH. On the

whole, he favours the conjecture that it is a different species.

In this research he has shown remarkable acquaintance with living men, as well as with written documents. He has collected evidence from all quarters, and endeavoured to sift and weigh it well. And he has made out a story, which appears so singularly to combine the marvellous with the true, that it is a matter of regret that nobody has translated it into our tongue. (Des Mollusques, Tom. 2. p. 256–412.) He quotes the recital by Trebius Niger, of such an animal devouring the stock of the fishermen at Carteia of Grenada in Spain, and killed by them. He does the like of Ælian's account of the destruction of another one at Pazzuoli in Italy. The evidence of Aldrovandus, Jonston and Gesner, is brought forward to the same point, that is, of the wonderful size, strength and enterprize of the Sepia Octopus.

Leaving the older authorities, Mr. Montfort comes to modern days. He relates at large the inscription on a votive tablet in the chapel of St. Thomas, at Saint Maloes, in France; where the whole crew of a ship from that port, on a slave voyage to Africa, declare that on the coast of Angola, their vessel was attacked by a seamonster, grappling it one side, and curling its arms into the rigging and masts. The weight, as the creature clung to the side, was great enough to heave the vessel down, and to put her in danger of sinking. The affair happened at mid-day, and in calm weather, while they were riding at anchor. The people rallying after their fright, fought the animal with axes, spears, and cutlasses, and succeeded in cutting his arms from his body. The latter then fell down, and the ship righted. This was a gigantic Sepia, and of the species the writer calls Colossal. To perpetuate such a remarkable occurrence, the crew caused a painting to be made of the Polypus grappling the ship, and to be placed in the church also. Mr. M. has embellished the article with a copy of the encounter, engraved by an eminent artist.

The opinion of M. Grandpré, the African traveller, is adduced in favour of the story, saying that the Colossal Polype is well known to the negroes, who entertain a

great dread of him, because he not unfrequently throws his destructive arms over their boats and canoes, and carries them to the bottom.

Mr. M. states the narrative of the Swedish Captain Dens, who on a voyage from Gottenburgh to China, was attacked on board his ship by a colossal polype. Being in the tract of ocean situated between Cape Negro and the island St. Helena, in about 15° of south latitude, during calm and fine weather, and in the day-time, the monster with a grasp of one of his arms carried off two men that were working on the outside of the vessel, together with the scaffold on which they stood. And with another of his arms, he seized a sailor in the shrouds, and crushed him so that he died the next day. The crew cut off with their knives and axes, the arm that was entangled with the man in the rigging, and wounded the body with harpoons and lances. Being finally disengaged, the animal sunk along side, with harpoons and lines fastened to him. But he broke the cords asunder and got clear, in spite of all they could do to catch him. The piece of the arm which the monster left on board, was about the thickness of the mizen-mast, and tapering away to a very sharp point. Its inner surface was furnished with suckers or cups, of the size of ladles, to fasten upon whatever he pleased. And although it was not severed at its base, it was nevertheless about five fathoms, or thirty feet long. Its entire length could not be fairly estimated at less than forty feet.

Strange as these recitals appear, there are several modern witnesses of the prodigious size of the arms of the Sepia Octopus, a few of whom are worthy of being stated.

The master of an English whaling vessel told the distinguished Dr. Schwediaur, in 1783, that he killed a whale (of the spermaceti kind, no doubt) whose gullet, on examination, was found to contain an arm of a polypus twenty-seven feet long, and of the thickness of a mast. The end that had entered the stomach was partly dissolved in its concoctive juices.

Captain Ben Johnson of Dunkirk, assured Mr. Montford, that he killed a whale, out of whose mouth a

substance projected. It attracted the curiosity of himself and his sailors so strongly, that they applied to it a takle, after the dead fish was fastened alongside, and hauled it out. On displaying the fleshy mass upon the deck, they could scarcely believe their own eyes, when they found it to be an arm of a Squid, bitten off at both ends; for it was about as big as a mast, and had suckers as large as a hat-crown. The part next the animal's body appeared to be a fresh wound; but the extreme portion seemed as if it had been bit off in a former encounter, for it had grown out about the length of a man's arm, and begun to cicatrize. This fragment, accurately measured by a line, was seven fathoms long.

Another commander of a whaling vessel, named Reynolds, of Nantucket, informed the same gentleman, that very soon after having harpooned a whale, a long fleshy substance was discovered floating on the water. The sailors at first were terrified, supposing it to be a huge sea-serpent. But correcting their mistake in a short time, they seized it with the boat-hook, and fastening ropes around it, towed it awhile astern, and then hoisted it on board the vessel. On examining the supposed marine serpent, it was satisfactorily proved to be an enormous arm of a Squid, nine fathoms long, and at the larger end two feet and an half in diameter, or seven feet and an half in circumference. The suckers were as large as dining plates. The limb tapered away to a very sharp point. This was supposed to have been disgorged by the whale on the moment of being wounded, as is frequently the case.

On these facts, this ingenious writer endeavours to reconcile to probability and truth, the stories of huge snakes said to have been seen at sea, as being the arms of Squids in connection with the bodies of the animals, or separated from them.

He labours too to show how the facts of the sudden stoppage of the course of vessels at sea, without any ostensible cause, may be ascribed to the grasp or suction of these colossal polypes.

He thinks the loss of ships, without whirlpools or storms, may be occasionally attributed to these monsters of the deep.

After this able display of ancient and modern research, and of the evidence gathered from written records and from living men, Mr. Montfort passes from the history of the colossal polypus, to that of another species of the same genus, and which he terms the KRAKEN.

His opinion of this being is, that it is the *arbor marina* of PLINY; the *monstrum marinum* of PAULINI; the *bellua marina omnium vastissima* of AUGUSTUS DE BERGEN; the *Trolwal* of the inhabitants of Northern Europe; and the *Teufelwal* of the Germans. Linnæus considered the Kraken as a real existence in his *Fauna Suecica.* He called it in the language of his nomenclature, *microcosmus*, the little world. And he retained it in his Systema Natura, until that work had passed the sixth edition. He arranged it among the testaceous animals, by reason of its alleged stony or rocky coat, or covering. This great naturalist, however, withdrew it from his later editions. Bomare ridicules the notion of the Kraken. Banks classes it as an article of fabulous zoology. And Aldrovandus, Ambrosinus and Jonson, fond as they were of the wonderful, seem to have been awed to silence on the subject of this most extraordinary animal.

Yet, with this information before him, Montfort comes forward to prove the existence of the Kraken, the largest animal of the terraqueous globe, and excelling in enormous bulk, the colossal polypus before mentioned.

After an enlightened criticism, separating the exaggerated from the probable, and the incredible from the plain, Mr. M. decides in favour of marine animals belonging to the mollusca class, more huge and vast than any creature the land sustains, or than the behemoths and leviathans which the ocean nourishes in her capacious recesses. From various sources, he brings testimony of their rising from the bottom of the sea, and shoaling the water to such a degree, as to be measured by the sounding lines of navigators and fishermen: of their floating occasionally on the surface, and resembling with the plants, mosses, shell-fishes, zoophytes, and marine productions of every sort on their backs, true and

genuine islands, amidst the waves. For the particulars of this extremely elaborate and intelligent dissertation, I must after all refer to the original, as being a grave and recent examination of this portion of natural history.

In Turton's general system of nature, (Vol. 4, p. 118) it is stated, that the Sepias inhabit various seas, and that some of them grow to a prodigious size. They are armed with a dreadful apparatus of holders furnished with suckers, by which they fasten upon their prey and convey it to their mouths.

That species which has eight arms, without pedunculated feelers, (S. octopus) is said to have those arms sometimes nine fathoms long. And in the Indian seas the fear of them is so great, that the Malays and other people always carry axes in their boats, to cut off the arms of these destroyers, should they throw them over the vessels, and attempt to drag them and their crew under water.

It would be too sceptical to set aside this whole mass of evidence. At the same time, there would be an excess of credulity, in considering the present amount of knowledge as satisfactory and complete. Before we can say we are contented, much more must be done. Uncertainties must be removed; mistakes rectified; and differences reconciled. There must be a more near and precise examination of these productions in their native element.

I therefore warmly exhort masters of private vessels, their officers and crews, to be intrepid in approaching, and circumstantial in examining all such appearances. I make the same request of every commander, gentleman holding a commission, and seamen in the public service. And with equal earnestness I entreat all passengers who have either become proficients in science, or who are only influenced by its taste and relish, to improve every opportunity that may present, of reducing this department of zoology to certainty and system.

With sincere acknowledgments for the pleasure and instruction I have received from the perusal of your translations from the Persian tongue, and from your botanical, geological, and other scientific works, I assure you once more of my very high respect.

SAMUEL L. MITCHILL.

DESCRIPTION OF THE PLATE.

So much of the body of the Sepia Octopus as described by the navigators, is seen at distance, extending from the mark 200, which is their estimated admeasurement of feet, to that under a flying bird. On its most elevated mass there is a swarm of roosting sea-birds. The cavity, or eye-like appearance, cannot be defined as an organ, except that fins above it were seen to be in motion.

The ship marked 90, is placed there to designate in what parallel point of view stood the observers of the huge monster, and to indicate its relative proportion of size for the same purpose.

And for the same purpose we have added a correct drawing of the Whale (Balæna) which measures the greatest, but very rare length of 75 feet.

Metheoric appearance called the Palatine Light.

(By Aaron C. Wiley.)

Block Island, December 10, 1811.

Our customary readers may remember that in Vol. xiv and page 389 of the Medical Repository, a description was promised of a wandering and lambient flame or light, frequently seen at some distance from the shore, at that place. The editors have been favoured with that paper some time since, and they are happy to dispose of it, thinking it well worthy the attention of natural philosophers.

This curious irradiation arises from the ocean near the northern part of the island. Its appearance is nothing different from that of a blaze of fire. It beams with various magnitude; being sometimes small, resembling the light of a distant window, at others expanded to the bigness of a ship with all her canvass spread. When large, it sometimes displays a pyramidical form, at other three coruscant streams. In the latter case the streams are in some measure blended together at the bottom, but separate and distinct at the top. The exterior ones generally rise after the middle one, and are not quite so high. It probably has one of these figures when small, but, owing to distance and surrounding vapours, cannot clearly be perceived. It often happens that it is in a constant state of mutation, as it respects its bigness; decreasing, by degrees, till it becomes invisible, or resembles a lucid point; then shining anew, either, with a sudden flash, or gradual increment to its former size. Sometimes the mutability regards its lustre only; becoming less bright till it disappears, or nothing but a pale glimmer can be discerned; then resuming its former splendour in a

* Whether this blaze actually touches the water, or merely hovers over it, is uncertain. No person, as I have been informed, has ever been near enough to determine. None of the boatmen have courage enough to approach it; on the contrary, when they perceive it in their way, they give it a good birth.

manner similar to that just related. The duration of its greatest and last state of illumination is not commonly more than two or three minutes. This inconstancy does not take place in every instance.

When it seems to be totally extinct, it does not always return in the place where it ceased to be an object of vision. It is not unfrequently the case that it is next seen shining at some considerable distance from where it disappeared. In this transference of locality it seems to have no certain line of direction.

When more expanded, this blaze is generally wavering like the blaze of a torch. At one time it appears stationary, at others progressive. It is seen at all seasons of the year, and for the most part, in that calm weather which precedes an easterly or southerly storm. It has, however, been noticed during a severe north-western gale in winter, and when no storm immediately followed. Its continuance is sometimes but transient, at others throughout the night. It sometimes appears several nights successively.

It actually diffuses the luminous principle. A gentleman, whose house is situated near the sea, informs me, that he has known it to illuminate considerably the walls of his room through the windows. It approaches within half a mile of the shore, at others is seen blazing at six or seven miles distance. It has been discovered from the adjoining part of the continent, and at first, mistaken for a vessel or building on fire.

Having given a concise, but general description of this unusual radiance, in which I have been aided by the concurrent testimonies of divers veritable characters, I will now present you with the few observations afforded me by the opportunities I have had of viewing it myself. The first time I beheld it was evening twilight, in February, 1810. It was large, and gently lambent; very bright, broad at the base, and terminated acutely upward. From each side seemed to issue rays of faint light, similar to those perceptible in any blaze placed in the open air, and viewed in the night. It continued about fifteen minutes from the time I first observed it, and then slowly became smaller and more dim till it was entirely extinguished.

I saw it again in the evening of December the 20th. It was then small. At first I supposed it to be a light on board of some vessel. But of this mistake I was soon undeceived. It moved along apparently parallel to the shore, about two miles in the time that I was riding once at a moderate pace. An ascent of ground then hid it, for a few minutes from my view; but passing this, I observed it about half way back to the place where it began its vagrant career. I then stopped to consider it more attentively. It would seem to remain still for a short time, then move pretty quickly several rods, when it would make another halt; thus, being in a state of alternate motion and rest. Its magnitude and lustre were subject to that unsteadiness described above.

This lucid motion is known by the name of the *Palatine Light*. By the ignorant and superstitious it is thought to be supernatural. Its appellation originated from that of a ship called the *Palatine*, which was designedly cast away at this place in the beginning of the last century, in order to conceal, as tradition reports, the murder and inhuman treatment of the unfortunate passengers. From this time it is said the *Palatine Light* began to appear; and there are many who firmly believe it to be a ship on fire, while their fantastic and distempered imaginations figure masts, ropes, and flowing sails.

The cause of this "waving brightness" is a curious subject for philosophical investigation. Some perhaps, will suppose it to depend upon a peculiar modification of electron; others upon an inflammation of phlogistous (hydrogenous) gas. But there are, possibly, many other means, unknown to us, by which phlogiston may be evolved from these materials with which it is latently associated by the powers of chemical affinity. I have stated facts, but feel a reluctance to hazard any speculations. These I leave to you and other erudite researchers of created matter.

INTELLIGENCE.

Observations on the Weather and Diseases of the City of New-York.

Not many cases remained in our city of the last winter epidemic, at the issuing of our preceding number, and very few acute diseases offered any of the thoracic and typhoid symptoms of the peripneumonia notha. The pertussis, or whooping cough, succeeded to the measles, among children. Spring catarrhs of adults were frequently marked with whooping paroxysms, and made it very dubious, even in some old persons, whether or not they had the whooping cough. Two remarkable circumstances however have attracted our attention in the pathologic constitution of the quarterly period to this day (July 4.) The one was the frequency of cutaneous determinations, psoric and even herpetic-like and miliary eruptions, erithema, &c. The other appeared an uniform inflammatory disposition in rheumatisms, pleurisy, hydrocephalus, and cholera. Of the two latter a few fatal cases have been noticed; but none of the above diseases were frequent beyond the least proportion of sickness incident to large populations.

We are happy to observe that the continued state of health in our city and suburbs has kept pace with the regularity of weather and gradual temperature, during the spring and until the latter end of June, when the heat suddenly arose to an intolerable degree. The first summer month has been so incessantly rainy as to endanger, we apprehend, the first crops of the season, and to create causes and circumstances of disease during the autumnal months.

Bills of Mortality—Thermometrical Observations—By Isaac Ball, M. D. Assistant to the Board of Health.

DEATHS FROM 1ST MAY TO JULY 3D, 1813.

From various Diseases.		Undefined and Consumption.
1 week	46	15
2	47	14
3	47	12
4	44	12
5	47	15
6	24	7
7	26	5
8	21	9
9	39	10
	341	99

The medium of the temperature has been regularly increasing to the 28th of June, when the thermometer rose to 73 A. M. 80 at noon, and 81 P. M.

The 18th, in the city of Philadelphia, it was 88.

In Raleigh, N. Carolina, 102—*Four degrees above the highest degree known in that city.*

DISEASES OF THE ARMY.

We feel extremely gratified that no extraordinary cause or prevalence of disease in the army on the frontiers, and in the invaded territory of the enemy, has occurred since the extinction of the winter epidemic, of which ample documents have been presented to our readers. A scarcity of materials on such a subject we would always feel happy to acknowledge, and replace by more interesting articles of instruction. At present we think it our duty to substitute a summary statement of the diseases and health establishment of the 3d military district, which embraces the state of New-Jersey, and the southern part of New-York, being commanded by brigadier-general George Izard, in the report of our

colleague, Samuel Akerly, Esq. Hospital-Surgeon of the district, we find the number of sick and deaths, divided into the six months of the year, in the following table:

	Sick.	Died.
January,	235	33
February,	187	12
March,	205	11
April,	85	6
May,	55	3
June,	92	4
Total,	860	69

This is the amount of regimental practice within the harbour of New-York, not including a detachment of militia, stationed near Sandy Hook, in Jersey, from whom no return has been received. Of this aggregate number, some were sent to the General Hospital, which was opened 20th April, 1813, at Greenwich; and with the sick from Fort Columbus, from the Arsenal in New-York, and from recruiting parties, there is an amount of Hospital practice, of 99 sick and 8 deaths.

The most prevalent disease was Pneumonia, of which about one fifth died. In the months of January and February it was most destructive, and the mortality was more particularly confined to one regiment of volunteers, which was not full, nor completely organized. Recruits were daily arriving, and the irregularities among raw and undisciplined soldiers caused an increase of the mortality, which gradually abated, and the regiment will now vie in appearance and discipline with the best organized corps. The disease was violent in its symptoms, and short in its duration. I call it simply Pneumonia, for though the morbid appearances were sometimes found to resemble those discovered after death from spotted fever, or the winter epidemic, which have been alarmingly prevalent in the north and western parts of New-York, yet I have found nothing but what I have before seen in similar cases at other times.

The febrile cases of disease in regimental practice

compose nearly two thirds of the whole amount of sick, and the deaths about one ninth of the number.

Many of the pneumonic complaints had a tendency to become typhoid, if not cut short at the first febrile accessions, and if further prolonged they ran into phthisis. Of the seven who have died of this disease in the U. S. army hospital, two died in the early stage, three typhoid, and two of consumption. Other cases of consumption following pneumonia, now in the hospital, may hereafter be the subject of remarks, when the subject will be more fully discussed, and the morbid appearances described."

SAMUEL AKERLY,
Hospital Surgeon, U. S. A.

Economical Observations on Military Hospitals, &c.

We have seen a valuable little manual of "Economical observations on Military Hospitals, and the prevention and cure of diseases incident to an army." It is the production of James Tilton, M. D. of Wilmington, (Delaware) lately appointed Physician and Surgeon General of the U. S. army. The venerable author was in the medical department of the army during the whole of our revolutionary war. He has written from experience, and endeavours to fix upon a plan of arrangement for the medical staff, which is to render their services efficient and honourable. "It is remarkable," he observes, "that none of the military writers have paid much attention to the regulation of military hospitals; and while every other branch of army arrangements is digested into method and system, yet this is still unsettled, different in almost every service, changeable and to be learned at the commencement of every war." The nature of our government, and the comparative state of the people of the United States, with respect to those of Europe, is such, that Dr. Tilton thinks it improper to adopt the plans of arrangement of the medical departments of the armies of Europe. Hence he offers what from his own experience he deems most proper accord-

ing to our situation. He does not distinguish medical officers into Physicians and Surgeons, but considers them as one or the other, as circumstances may require. He proposes to establish a medical board in each military district, or separate army, to be composed of two or more hospital surgeons, and several regimental surgeons. This board is to have a field officer to sit as chairman, and meet monthly or oftener if necessary, by general order, to regulate the concerns of that department. This board is to examine and appoint all vacancies of hospital and regimental mates, with the consent of the commanding officer; to examine candidates for hospital surgeons, and recommend them to the Physician and Surgeon General for appointment, and to establish rules for the medical department. The oldest hospital surgeon is to be the director of general and regimental hospitals in the army or district where stationed, and to act as prescribing surgeon only, without interfering in commissarial duties. His attention will thus be drawn to visit the several establishments for the sick within his charge, and as director to superintend their concerns. Such an arrangement is to prevent impositions on the government, and hereafter to procure surgeons adequate to their respective duties.

Instead of establishing extensive and costly buildings for hospitals, Dr. Tilton proposes to extend the circle of regimental practice, and diminish the scale of hospital practice. Thus, if possible, to prevent disease, and ward off infection. His object is to have a harmonious understanding between surgeons of the army, and by a proper regulation of the medical board, keep in check any disposition to throw the sick into general hospitals beyond moderation and propriety. whereby they must become crouded, producing the inevitable consequences of camp, jail, typhus, or hospital fevers, and armies have suffered more than by their enemies. Medical books are full of examples to prove this fact, but the Doctor is a man of experience, and cites instances from the American army during the revolutionary war. In cases of necessity where regimental practice becomes increased, he proposes hospital tents for summer, and temporary buildings with ground floors for winter, as

best adapted for soldiers, and capable of being crouded with more impunity than barns, churches, or other buildings with wooden floors.

A celebrated French Remedy for the Gout.

We have apprised our readers, (p. 203, No. II.) that by a law in France, all royal patent letters and privileges for selling secret medicines, had been revoked and annulled. The proprietors of the same, and all future discoverers, if they choose, may submit their recipes and ingredients to the examination and judgment of a medical board appointed for that purpose, from whom the government receiving a satisfactory report of the efficacy, utility and DISCOVERY thereof, shall adjudge a proportionate compensation to the proprietors or discoverers thereof, for the purchase and publication of the patent or secret medicine.

We have it now in our power to add, that nearly a thousand secret or patent medicines have been thus disposed of, agreeably to the law enforced since 1811, to the great benefit of society, and preservation of many lives over an extensive empire. Health is no longer to be jeopardized by wondrous and imposing displays of cures for all complaints. Nor will quackery continue to deceive the credulous, and annoy the ignorant and suffering victims of diseases; cloud with doubt and distrust the best dictates of science, observation and experience; insultingly gather up wealth by its traffic, sooner than an enlightened and conscientious physician could obtain a small competency. Besides these inestimable improvements in the social order, there is a considerable acquisition of *new remedies*, which, if good, might remain equivocal and defective in the hands of ignorant inquirers; while, by able and judicious employment, they may be rendered extremely useful. Of this description is the famous remedy of Mr. Pradier for the Gout. So many cures by it had been formerly rumoured, that the faculty had engaged in considerable inquiries and experiments; but as usual, the

mysterious remedy had been left a subject of contention among partisans and opponents. It appears that the Medical Board have ably reported to the Minister on the nature, analysis, composition, and use of this composition, offering from facts, all possible physiological inferences which best explain and define whatever degree of efficacy can be expected from it. They conclude that the remedy of Mr. *Pradier* is not a *discovery* in medicine, but that under certain determined circumstances, it is productive of considerable relief, paves the way to a cure, assists the more direct operation of other internal applications. This patent medicine having already excited much anxiety among the public, owing to its pretended and *unexceptionable* efficacy, they think proper to advise government to publish the formula or recipe, adjudging to Mr. Pradier, as a compensation for it, the amount of 6000 livres, about 1200 dollars.

The following is the said recipe we now present to our readers, recommending to them, if they employ it, the concurrent advice of a physician, in order to assist and regulate its operation by other internal remedies.

℞ Balsam of Gilead, six drachms.
Red Peruv. Bark, one ounce.
Saffron, half an ounce.
Salsaparilla, one ounce.
Sage, one ounce.
Alcohol rect. 3 pounds.

Dissolve the balsam in a pound only of the Alcohol, leave all other ingredients to maceration in the residue of the Alcohol during 48 *hours, strain this liquor and mix it with the other. This tincture before it is put in use, is to be mixed with three times the quantity of lime water, stirring up the precipitate that exists in the bottle.*

Directions how to use the remedy.

Make a poultice with linseed meal, thick and large enough as to cover all the limb or part afflicted with the Gout. This being prepared, and as hot as to be bearable, pour upon it two or three ounces of the above tincture and spread it equally upon it; then wrap up the

foot or the leg up to the knee, securing the whole with flannel, or silk cloth and bandages to keep up the heat and the same poultice, which is not to be removed but after 24 hours, and sometimes every 12 hours. The remedy surely produces a great perspiration of the part, and even of the body, &c.

Information concerning the Natural History of Leeches in America.

The ingenious and enterprizing T. W. Waterhouse, M. D. communicates in a letter the following intelligence respecting the *Hirudo*, or Leech, of the United States. It will be found interesting to anatomists and practitioners, as well as to naturalists.

" In Massachusetts great difficulty has occurred in " the use of Leeches, which has led me into an exami- " nation of those that inhabit the waters in the vicinity " of Boston. From my searches, and my inquiries of " others, I am well convinced that the *Hirudo Medici- " nalis of Linnæus* has not yet been found there. I in- " tended, when at New-York, to have inquired particu- " larly of you respecting this useful animal, but I thought " of it only when I could not.

The one they have attempted to use in Boston is green above, with a row of about twenty three yellow spots down the back, and a corresponding row of the same number on each side, a little smaller. Between these are two rows of shades, dark green or black, corresponding with the yellow spots. Beneath, the colour is ochre yellow, which is continued on the upper side so as to form a narrow margin. Neither *Gmelin* nor *Turton* describe it in their editions of Linnæus. The only description I find of it is, by Dr James Stewart, in the London Medical and Physical Journal for 1808. The same is used in this city *with success*.

Two other species are found near Boston; one resembles, and I believe is, the H. *Heteroclyta* of Linnæus; and the other, which I found was used in New-York, very much resembles the H. *Linearis* Lin. but I can-

not discover any eyes, and when it has been kept some time, a few white bodies appear in its belly, probably eggs.

I find the anatomy of the Leech very curious. The nervous system consists of about twenty-three ganglions, with lateral nerves from each of them. The system of blood-vessels is a long canal with branches, containing red blood, on each side of the body. A long stomach divided at its lower end for three quarters of an inch at the lower extremity, having about 26 valves, much like those in the human intestines, which has led to the idea of their having 24, 25 or 26 stomachs. From the bifurcation of the stomach arises the rectum.—There is a large medullary substance, nearly in the middle of the body, having two hemispheres, connected by a white thread on each side to the male organ of generation; and also by the same kind of threads, to small, nearly transparent, reddish globules, nine on each side, at the distance of a quarter inch from each other. These globules adhere to the sides of the stomach, and are plentifully supplied with blood-vessels. This organ must be an important one, but what its function is would be almost presumption in me to guess. May it be a respiratory organ? or may these globules be little *spleens?* It has no more connection with the ganglions and nerves, than with the blood-vessels. The organs of generation are much like those of the snail, each animal being perfect in itself. They are easily demonstrable.

Vitet has, I understand, published a minute treatise on Leeches, which I have not been able to see; nor any other description of their anatomy.

Black or Tinging Matter of the Lungs.

A paper by Dr. Pearson, on the tinging matter of the bronchial glands of the lungs, and on the black, or tinging matter of the lungs themselves, was read before the Royal Society of London. From his researches it appears, that that black matter is principally charcoal in an uncombined state, or at least; that it is only inti-

mately mixed with a small portion of animal matter. He conceives that it is derived from the atmosphere in breathing, that it is first conveyed into the air tubes, and from them, by means of the numerous lymphatics, into the bronchial glands, and therefore, that it is not a secreted substance. This subject being so novel, Dr. Pearson declined entering into much reasoning, or drawing many conclusions until more facts are brought to light. (Analec. Magaz. July, 1813.)

Cultivation of American Botany by Foreigners.

It is very remarkable with how much more avidity the history of our native vegetables is promoted by foreigners, than by our own people.

Since the termination of the labours of Mr. Michaux, and the discontinuance of his garden of plants near New-York, these parts of North America have been visited by several collectors and describers. Of these, Mr. Masson passed through New-York on his way to Canada, about 1797. Then Mr. Rafinesque visited Pennsylvania, and the shores of the Delaware and the Chesapeake. Afterwards, Michaux the younger, travelled extensively through the United States, examining and gathering every plant as he went along. Since that time Mr. Charles Whitlow has beheld with botanical eyes the West-Indies, New Spain, and many districts around New-York. During a part of the same period, the Frasers explored our country in various directions, for the purpose of acquiring a more circumstantial account of its vegetables. Lastly, New-York has had the pleasure of beholding Mr. Bradbury. This enterprising naturalist has ascended the Missouri, beyond the great bend, to the Ricara tribe. And he has returned safe with specimens of the vegetables and minerals that have fallen in his way. Of the former, there appear to be many new species.

Mr. Bradbury confirms the accounts heretofore received, of the vast prairies or plains which the voyager traverses in Upper Louisiana. He describes them as

totally destitute of wood; this latter growing only on the water courses and low margins of rivers. He saw herds of bisons to the number probably of some thousands, who feed upon the grasses which these level tracts produce. In certain places there are strata of coal. Some of those are actually on fire, and exhibit the appearance of burning plains, as they have been called. The fragments of rock, said to have been brought from the mountains situated west of the head waters of the Missouri, are sand stone, the grains of which are curiously connected by a siliceous cement, rendering them very smooth and hard.

Mr. Pursch, who has for several years cultivated botany at New-York, is engaged in publishing at London, a description of the plants brought from Louisiana by the late enterprizing, though unfortunate Meriwether Lewis. Having laboured long in examining and delineating the copious herbarium which that gentleman brought home, Mr. P. went to Europe for the purpose of exhibiting his performance more advantageously to the scientific world. And there, we learn, that under the friendship and patronage of Mr. Lambert, vice-president of the Linnæan Society, Mr. Pursch is preparing for the botanists of Great Britain, this account of the rare, and undescribed species of North American vegetables. For our abstract of Governor Lewis's expedition to the Columbia river see Med. Repos. Vol. 10, p. 288; and for our narrative of general Pike's adventure to the Rio del Norte, see M. R. Vol. 11, p. 297.

On the Preparation of Verdigris.

Some acetite of copper, manufactured in New-York, having been forwarded to Professor Coxe, of Philadelphia, he politely returned the following answer:—

"The patent verdigris you sent me, as I imagine, "is made by decomposing the sulphat of copper with "acetat of lead; for you will find by dissolving it in "water, a large proportion of white precipitate, inso- "luble in nitric acid. If it was the white lead or car-

" bonate, this acid would dissolve it with effervescence.
" A year or two ago, I made 6 or 8lbs. of this verdi-
" gris, which formed in very beautiful crystals, and
" gave a fine rich colour, equal to that of any distilled
" verdigris. I separated it entirely from the precipi-
" tated sulphat of lead, which is not the case here; but
" the verdigris, and at least a portion of sulphat, are
" combined, with a view of selling the article cheaper.
" I send you a small portion in powder, which is en-
" tirely soluble in water, and does not cloud with mu-
" riat of Barytes. It is a very expeditious mode of
" making it; and might be advantageously employed
" by our hatters, &c. when common verdigris is dear—
" especially as the solution is made to their hands; the
" separation of the sulphat, by subsidence and decan-
" tation, being all that is essential. I presume the
" maker of the above does not claim originality in his
" plan—which I am persuaded is the one I mention.
" I sold the verdigris I made for $4 per lb. but if ne-
" cessary, it might be afforded cheaper. I think we
" might form it by stratifying copper, and the pomace
" of apples in cider-making, together; especially if a
" little vinegar was occasionally sprinkled on the mass."

Chemical Controversy between Sir Humphrey Davy and Mr. Murray, decided in favour of the latter.

In one of the former reports of the London Monthly Magazine, there is a short account of an experiment performed by Mr. John Davy, in the College Laboratory at Edinburgh, in the presence of his brother Sir Humphrey Davy, and some of the most able chemists of the University, which apparently disproved the alleged existence of any combined water in muriatic acid gas. Mr. Murray, however, a very justly celebrated private lecturer on chemistry at Edinburgh, who, in conjunction with many other eminent philosophers, always hitherto upheld an opposite opinion, has lately been induced, for the laudable purpose of farther cor-

roborating the accuracy of his previous inferences, to resume his investigation of the same subject, in the same laboratory, and before most of the same witnesses. The principal variations that Mr. Murray deemed necessary to be made upon repeating the experiment of Mr. Davy, were, the use of a much smaller vessel than that employed by Mr. D. (the capacity of which was not less than twenty-six cubic inches,) so that throughout every part of it an equal heat might be applied, and a contrivance to prevent the condensation of the water, in that portion of the vessel occupied by the sublimed salt, and to avoid the operation either of increased pressure or of a partial vacuum. In all other respects the experiments being nearly similar, about ninety cubic inches of the acid gas were saturated in a small exhausted flask, of the capacity of four inches, with ammoniacal gas, both gases having been prexiously rendered free from moisture by long exposure to dry potash and dry muriate of lime. A glass tube was then accurately inserted into the neck of the flask, and then a gradually augmented temperature was applied to all its lower portion, through the medium of a sand-bath. In a short time a sufficient quantity of water was collected in the glass tube to be condensed in globules perfectly distinct, until, at length, the salt itself was sublimed, and the experiment was terminated. It thus appears, beyond the possibility of doubt, that water actually does exist in muriatic acid gas, and, as Mr. Murray says, although the quantity obtained, which was estimated by Dr. Hope, the Professor of Chemistry, one of the gentlemen who witnessed both experiments, at about two-thirds of a grain, may not be the whole quantity which, from other facts, there is reason to conclude exists in the acid gas, it establishes its presence as much as if a larger quantity were obtained. The production of any water is incompatible with Sir Humphrey Davy's hypothesis, and therefore refutes it; it is conformable to the opposite doctrine; and becomes then a proof of its truth; and for the quantity being less than that from other saline combinations of the acid, an adequate cause can be assigned. Mr. Murray also instituted another experiment, by which he proved that the suppo-

sition of Sir Humphrey Davy, that the muriate of ammonia might have absorbed water from the atmosphere during or after its formation, when being transferred from one vessel to the other, as in Mr. Murray's former experiments, is altogether unwarranted by fact, and, on the contrary, that muriate of ammonia, instead of possessing the property of absorbing water from the atmosphere, has, on the contrary, a tendency to part with it; Mr. Murray having ascertained by a delicate balance that the salt, during full exposure to the air, showed not an increase, but an evident loss of weight.

[*Lond. Monthly Review, May,* 1813]

NATIVE MALLEABLE IRON.

In our work, Vol. 15, p. 88, a description was given of a large lump of native iron. The same was described and figured in the American Mineralogical Journal, No. 2, p. 124. Since that time this curious mineral has, by the consent of the owners, been delivered to the Messrs. Stevensons for division. These artists have severed many pieces from the main body, by mauls and cold chissels. From these, we hope, that cabinets and laboratories will be generally supplied with specimens. They pronounce the metal to work well under the hammer. We were witnesses of the operation, and do now possess several little utensils formed from it. Bloomery is the sort of iron it resembles more than any other. After a sufficient quantity had been separated for examples, the mass was restored to the proprietors.

MODE OF WORKING PLATINA.

It is published in Philadelphia, that a successful method has been discovered of rendering Platina malleable. Dr. Erick Bollman gives notice that he will at-

tend to applications and inquiries on the subject generally. An alloy of malleable platina with copper is mentioned. This mixture is said to be very ductile, to admit a high polish, and to resist the tarnishing operation of atmospheric moisture. Being found very fit for certain mathematical instruments, and for various other purposes, chemists, dentists, jewellers, and other artists, are called upon to supply themselves with their respective setts of tools and utensils, from this malleable platina. We regret that the exact manner of preparing the crude material is yet a mystery to the public, the advertiser having not communicated the process.

EARTHQUAKES IN VENEZUELA.

HAVING been enabled to peruse M. Drouet's *Voyage à la Cote-Ferme*, published at Pointe-a-Pitre, Guadeloupe, 4to. p. 92, 1813, it is in our power to extract from his *description du tremblement de Terre qui a eté ressenti le* 26eme *Mars*, 1812, some particulars concerning terrible earthquakes which desolated Caraccas and the neighbouring cities, about sixteen months ago.

Mr. D. states that the mountains which surround the town of Caraccas, and those which form the chain extending to Laguira, have the appearance of extinguished volcanos. Parcels of lava are found in abundance, as are also confused masses of quartz, broken granites, portions of melted metals which had undergone fusion, iron and copper almost carbonized; whence he thinks it may be concluded that the country has already experienced the operation of volcanic eruptions.

At the base of these mountains there is no natural disposition of the earth in horizontal layers; but the soil and stones are jumbled together without order or regularity. The mountain called Sylla contains more volcanic productions than any in the neighbourhood of Caraccas, and its summit is 900 toises (5400 feet) above the level of the ocean. The city

and plain of Caraccas are only 560 toises (3360 feet) high; and this elevation renders the region one of the most delightful upon earth, although its situation is no more than 11°, 30′, N.

The base of mount Sylla is calcareous, approaching in some places to the character of lime or chalk; and of a micaceous substance, intermixed with primitive rocks, and interspersed with metallic veins, containing bismuth, plumbago, antimony, iron, and even small quantities of copper and silver. Plants and shrubs scarcely grow upon it, and the bare and parched sides of this and of the other mountains which form the borders of the valley of Caraccas, make a most striking contrast with the fertility and luxuriance below. And what is very remarkable, in this mountainous region, the earth abounds with salt-petre; insomuch that M. Ponsard, having satisfied himself of the fact, was engaged in establishing a manufacture of the article, when the earthquake laid his establishment in ruins.

These subterranean commotions are supposed not to have been the first which Venezuela had experienced. From the testimonials which remain, there is reason to conclude that the country had undergone violent convulsions in times too remote for the pen of history to record.

During Passion week, on holy Thursday, at 4 o'clock in the afternoon, while the streets were filled with processions and the churches with priests and people, and while the ceremonies of flagellation and bearing the cross, were performing, a most tremendous earthquake occurred. The cracking of houses, and the descent of tiles, as if acted upon by a gust of wind, were the first notices of it. But as the atmosphere was calm, and not a breath of air was stirring, the cause was instantly conjectured. The shocks succeeded each other with incredible velocity, and were so vehement that persons standing and walking lost their balance, and were even thrown to the ground. Private houses, public buildings, and churches tumbled down in all directions. Clouds of dust enveloped every thing; and the crush of edifices, with their dead and mutilated inhabitants exhibited spectacles of horror on every side.

The wretched survivors wandered about all night, and the next day were ordered by the police, to retire from the desolated town of Caraccas and encamp themselves on the adjoining plain.

The shocks continued almost without interruption on the 27th, and were constantly preceded by a lumbering and lengthened noise, which added to the terror of the scene. They were repeated at intervals until the 4th April, when at 4, P. M. there was another as violent as that of the 26th March, and of much longer duration. This accomplished the destruction of those things which had escaped the former. Of forty churches, three only survived demolition, and even those were very much damaged. Many other towns were greatly injured, particularly Porto Cavello, Saint Philip, and Laguira, in the latter of which only three towns were left standing, the rest having been overturned on the heads of the inhabitants.

Some of the shocks were partial or local. Some, for example, which were felt at Caraccas were not felt at Laguira; and *vice versa*. The sound which preceded them was more sensible in high situations. Sometimes it resembled the roaring of thunder under ground. But it was ascertained, that there were noises without shocks, though this might arise from the extension of the sound to a greater distance than that of the shock. As far as could be ascertained, the sounds and tremblings proceeded from W. to E. During the commotions, the atmosphere was observed to have undergone certain changes. As there was an almost uninterrupted calm, the heat was considerably increased. Lightning and meteors were multiplied at an alarming rate, although the horizon was not loaded with clouds, nor were there any tokens of a gathering storm.

Mr. D. thinks it worthy of investigation, how far the Caraccas earthquakes may have had a connexion with the Cordilleras, with the workings of volcanos, and particularly with the alarming eruption at Saint Vincents, an island belonging to the Chain of the Antillas, about the beginning of May, 1812. On the theory of earthquakes, the author after examining the several hypotheses of those who ascribe them to fire acting

upon subterranean fuel, and forming very elastic vapour; to fire acting upon water, and converting it to most powerful steam: to fire producing both vapour and steam, and lastly to electricity; leaves the subject in that respect, like all his predecessors, just where he found it.

His essay contains judicious remarks on the connexion of the earthquakes, with the religious rites and practices of the people; and also with the counter-revolution from independence back to royalism. But we forbear to mention them.

THE Trustees of the University of Pennsylvania, have appointed Doctor BENJAMIN SMITH BARTON, "Professor of the Institutes of Medicine, the Prac-"tice of Physic, and of Clinical Medicine," in the room of Dr. Benjamin Rush, deceased.

Officers of the Medical Society of the County of New-York, elected July 5th, 1813.

Dr. William Moore, *President*,
Dr. Wright Post, *Vice-President*,
Dr. John Onderdonk, *Treasurer*,
Dr. Henry U. Onderdonk, *Secretary*.

Dr. Thomas Cock,
Dr. Valentine Mott,
Dr. John Neilson,
Dr. James S. Stringham,
Dr. Samuel Osborn,
} *Censors.*

Delegate to the State Society.

Dr. JOHN R. B. RODGERS.

College of the Western District.

THIS College was incorporated 12th June, 1812, and located in the town of Fairfield, Herkimer county, and state of New-York, with twenty-six trustees, and the following officers—

Lyman Spalding, M. D. President.

Westel Willoughby, Jun. M. D. Vice-President.

Lyman Spalding, M. D. S. M. Lond. Soc. Cor. Professor of Anatomy and Surgery, and Lecturer on the Institutes of Medicine.

Westel Willoughby, Jun. M. D. Professor of Obstetrics.

James Hadley, A. M. Professor of Chemistry, Materia Medica, and Mineralogy.

William D. Ford, Esq. Treasurer.

Dr. Jonathan Sherwood, Register.

☞ For further information, a reference may be had to the President, in the City of New-York, the Register at Fairfield, or either of the Trustees.

MEDICAL INSTITUTION AT YALE COLLEGE.

THE Medical Institution of Yale College, established by an act of the Legislature of this State, will go into operation the last week of the ensuing month of October.

It is expected that the following arrangement of the Lectures will take place, viz.

Theory and Practice of Medicine, by Eneas Munson, senior, M. D. and Eli Ives, M. D.

Surgery and Midwifery, by Nathan Smith, M. D.

Anatomy, by Dr. Jonathan Knight.

Chemistry, Pharmacy, and Mineralogy, by Professor Silliman.

Materia Medica will, for the present, be connected with the other courses, and the Elements of Botany will be delivered by one of the Professors.

The large stone house, at the head of College street, has been taken as a Medical College: it contains a very

fine lecture room, with every necessary appendage, and chambers for the Medical Students.

A good Anatomical Museum and Library will be furnished by the College and Professors.

The Chemical Establishment is competent to a complete course of instruction, and has been for several years in operation.

The Cabinet of Minerals, belonging to the College, connected with the splendid collection of Colonel Gibbs, is unrivalled in this country.

It will be remembered, that every person who shall commence the study of Medicine, after the above courses are begun, is, by law, required to attend them, or other similar courses of instruction.

TIMOTHY DWIGHT,
President of Yale College.

Yale College, July 15, 1813.

DIED.

In Poland, Joel Barlow, Minister of the United States to France. He was on a journey from Paris to Wilna, for the purpose of furthering the objects of his mission, by an interview with Napoleon I.

At his residence, Clermont, N. Y. Robert R. Livingston, late Minister to France, &c. His zeal for the promotion of agriculture and the arts are well known, and are evinced by several tracts noticed in the progress of this work; such as his observations on pyrites as manure, Vol. 6, p. 315; on Merino Sheep, Vol. 13, p. 268; on intellectual property, Vol. 15, p. 1, &c.

At Fort Meigs, on the Miami, Major Amos Stoddard, late one of our corresponding friends and commandant at New-York. He expired in the service of his country, like a hero and a patriot. For his contributions to the Medical Repository, see Vol. 10, p. 44, Vol. 15, p. 300, &c.

At York, in Upper Canada, in the performance of his professional duty, Zebulon M. Pike, a brigadier general in the army, and one of the most enterprizing men

of our day. Our work contains manifold evidence of his activity in exploring the sources of the Mississippi, Vol. 10, p. 376—and in traversing Louisiana, Vol. 12, p. 292; & Vol. 15, p. 256.

In Augusta, Maine, July 9, 1813, the noted JOHN GILLEY, at the advanced age of one hundred and twenty-four years. This remarkable old man enjoyed good health to the end. He was a native of Ireland. He had resided in Augusta more than seventy years, and has left a large family. His youngest child is in his twenty-fifth year. On account of his remarkable old age, he has been visited by most of the strangers travelling in that section of this country. It is reported that an examination of his body by dissection was to be performed, by a physician, and communicated to the public.

Near Chicago, last autumn, Isaac I. Van Voorhis, surgeon's mate in the army. He is the author of several communications to this work; and was murdered by the savages, with the party of United States troops that were retiring from that post, on the approach of the enemy.

END OF VOL. I.

ERRATA.

17. At the bottom, for *Canigain*, read Carrigain.
19. 7th line from the bottom, for *Mercurial*, read Chemical.
20. 10 and 19 l. from the top, for *Progress*, read process.
21. 18 l. From the bottom, after the word, *Continued*, add the following: "till the globules of the quicksilver disappear." In the formulæ of the Massachusetts Pharmacopœia, the proportion of the quicksilver to the other ingredients in the three forms stand thus, viz. in the pill, 1-4; in the ointment, 3-7; in the plaister, 3-11; the trilavation is directed to be performed, with conserve of roses, for the pill; with hog's lard and mutton suet, for the ointment; and with olive oil and resin of pine, for the plaister; and to be continued as above mentioned.
22. 19 l. from the bottom, dele, *if*.
24. 8 l. from the bottom, for *Camphor*, half an oz. read Camphor, half a drachm.
25. 2 l. from the top, for *Camphor*, half an oz. read Camphor, half a drachm.
37. 11 l. from the top, for *Anthers*, read Antlers.
15 l. from the bottom, for *Disposition*, read Deposition.
38. 17 l. from the top, for *Inspected*, read Injected.
39. 2 l. from the bottom, for *daily*, read duly.
47. 7 l. from the bottom, for *Saw*, read Jaw.
57. 19 l. from the bottom, for *Pulmonialis*, read Pulmonalis.
64. 12 l. from the top, for *Libia*, read Tibia.
95. 12 l. from the top, for *Their*, read Thin.
126. 128. Note at the bottom, for *Tusk*, read Teeth.
131. 4 l. from the top, after *Restore*, read "the enamel."
132. 21 l. from the top, for *Canulæ*, read Cancellæ.
147. 5 l. from the bottom, for *Existing*, read Exciting.
185. 14 l. from the top, for *This bone*, read This, appear.
328. 13 l. from the bottom, for *aged* 75, aged 69.
369. 16 l. from the bottom, for *Feet*, read Fat.
405. 1 l. from the top, for *Metheoric*, read Meteoric.
3 l. from the top, for *Wiley*, read Willey.

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